“Not just a simple rash”

- Onychomycosis nailed
- A Rejang River rash
- Malaysian CPG for the management of psoriasis vulgaris: An update
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Nurturing tomorrow’s family doctors

Ng CJ
Editor in Chief

‘Nurturing tomorrow’s family doctors’ was the theme for the recently held WONCA Asia Pacific Regional Conference in Kuching, where primary care leaders, academicians, researchers, practitioners and students gathered to share ideas and debate issues important to family medicine. The Malaysian Family Physician helped to publish the conference supplementary abstract book.¹

A few important primary care issues emerged from this Conference. Firstly, primary care doctors are facing increasing number of challenges to deliver quality care, particularly in this era of double disease burden (communicable and non-communicable diseases), ageing population, rising healthcare cost and increasing patient expectation. The practice of evidence-based medicine and patient-centred care is expected to become the norm. The challenge remains how to deliver all these in the day-to-day busy primary care clinics.

The plenary speakers challenge us to: become a ‘very very competent’ family doctor; ‘strengthen the experience of family medicine’ provided to our students; conduct ‘quality research’ with rigorous methodology to provide evidence relevant to general practice; and ‘develop innovative clinical service models’ through an ‘organised, proactive, multi-component, patient-centred approach’.¹ This is a tall order, but it is a goal that we must strive towards.

As the Editor of MFP, it is my dream (I am sure it is the same for the past and future editors) to use this journal to achieve these goals. We can do this by publishing original research that highlights issues that are relevant to primary care. Jones et al shared their experience on implementing care planning in Australia for chronic diseases, particularly the barriers they faced as allied health workers.² To be a ‘very very competent’ family doctor, we must first be a good diagnostician. This issue showcased a few interesting dermatological conditions; we must be mindful that sometimes, ‘it is not just a simple rash’. It is also the aim of MFP to influence clinical practice by disseminating latest clinical evidence by collaborating with clinical practice guideline (CPG) developers to publish synopses of CPGs. Choon et al summarised the latest CPG on the management of psoriasis, informing us how to avoid diagnostic pitfalls and when to refer.³

I sincerely hope that you can use MFP as one of the tools to help you become a better family doctor.

References

1. Abstracts of WONCA Asia Pacific Regional Conference. Malay Fam Physician. 2014;9(S1).
Onychomycosis nailed
Leelavathi M, Noorlaily MN


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Introduction

Onychomycosis or fungal infection of the nail is a common presentation in primary care, which is responsible for almost 50% of all nail diseases.1 It may be caused by dermatophytes, non-dermatophyte moulds or candida species. Onychomycosis is commonly classified as distal lateral subungual onychomycosis (DLSO), superficial white onychomycosis (SWO), proximal subungual onychomycosis (PSO) and total dystrophy (TD) based on the pattern and the site of infection involving the nail complex.

It is estimated that about 32% of the elderly population are affected by onychomycosis and the prevalence increases with advancing age.2 Toenails are more frequently affected compared to fingernails and almost 30% of this condition occurs concurrently with cutaneous fungal infection, especially tinea manum and tinea pedis. Risk factors for onychomycosis include diabetes, immunosuppression, advancing age, peripheral arterial disease, sports activities and pre-existing dysmorphic nails due to disease such as psoriasis or trauma.3

The first step in managing onychomycosis is to achieve an accurate diagnosis. This requires both clinical identification and laboratory confirmation using microscopy and culture.4 Clinical features suggestive of onychomycosis, based on nail morphology, include thickened nail plate, discolouration, onycholysis and subungual hyperkeratosis. Laboratory identification of fungal element requires proper nail sampling technique with adequate amount of specimen to ensure a good culture yield. Laboratory features include positive microscopic findings of septate hyphae and/or arthroconidia as well as a positive culture for dermatophytes (e.g. Trichophyton, Microsporum, Epidermophyton) or non-dermatophyte nail pathogens.4 Although 30% to 50% of nail cultures yield false negative results, most guidelines recommend fungal culture to confirm diagnosis of onychomycosis prior to treatment initiation. This is because treatment duration is long and is associated with potential adverse drug reactions. It is also difficult to exclude treatment failure in the event of lack of response to therapy.

Treatment options and duration

The aim of treating onychomycosis is to achieve both clinical (clinically normal nails) and mycological cure (negative microscopy and culture). Although appropriate treatment may restore the clinical appearance of the nails, the rates are disappointingly low (35-50%),4 which, coupled with high relapse rates (10-53%), are the biggest challenge in the management of onychomycosis. However, treatment is required to prevent complications such as cellulitis and gangrene, especially among high risk patients such as diabetics.4 The choice of treatment depends on the causative organism, the type of onychomycosis (classification), the number and the severity of nails involved, whether the infection is confined to fingernails, toenails or involve both and previous treatment history pertaining to treatment failures.5 Treatment options include systemic agent, topical nail lacquer, nail avulsion and combination of these modalities.

Abstract

Fungal infection of the nail is a common condition that causes much concern because of its disfiguring appearance. Although specific treatment is available for this condition, treatment outcome is variable and persistent nail dystrophy post-treatment may cause distress to both the patient and the physician. This article describes the current available treatment options for onychomycosis, management approach and the expected treatment outcome to enhance primary care physicians’ confidence in managing this condition. Oral antifungal agents such as terbinafine and itraconazole are good treatment options for onychomycosis. Combination therapy using oral antifungal agents with topical lacquer preparations may provide added benefits. Evaluation of patient’s expectations, providing information on treatment outcome, clinical cure and recurrence rates are essential in the management of onychomycosis. This article is intended to guide primary care physicians to achieve realistic treatment goals and for a satisfactory experience in the overall management of this challenging condition.
a) Systemic agents

Oral antifungal agents are the mainstay of therapy for onychomycosis and are considered as first line in most cases. Terbinafine and itraconazole are the two main systemic agents used and both have shown good results.

Terbinafine is currently the most effective oral antifungal agent for onychomycosis achieving mycological and clinical cure rates of 78% and 53%, respectively, at 1 year post-treatment using continuous dosing between 12 and 16 weeks. Terbinafine can be used for dermatophytes, Candida species and non-dermatophyte moulds, especially Aspergillus fumigatus and Scopulariopsis brevicaulis. The recommended dosage of terbinafine is 250 mg daily for 6 weeks for fingernail and 12 weeks for toenail onychomycosis. Pulse dosing of terbinafine may be considered as its pharmacological properties persist in the nail for several weeks after withholding treatment. Side effects of terbinafine are minimal, mainly consisting of gastrointestinal symptoms. Abnormalities of the liver enzyme, drug-induced hepatitis and drug interactions are less frequent compared to itraconazole. Although all species of fungus respond well to terbinafine, non-dermatophyte moulds are less responsive and may require longer treatment duration.

Another effective oral agent is itraconazole. Itraconazole is effective against dermatophytes, yeasts and non-dermatophyte moulds. Itraconazole, either continuous (200 mg daily for 3 months) or in pulses, has similar mycological cure rates of 66% and 69%, respectively, at 12 months. Pulse regime is administered using 200 mg twice daily dosing for 1 week, followed by 3 weeks of drug-free period. Fingernail onychomycosis requires two, whereas toenails require three such pulses. Although itraconazole is an effective agent for onychomycosis, it has lower long-term mycological and clinical cure rates for onychomycosis compared to terbinafine. Drug-induced hepatitis secondary to itraconazole is a rare side effect, accounting for less than 2% of cases and commonly presents as liver enzyme abnormalities or cholestasis. This adverse effect is more common with continuous therapy of itraconazole beyond 1 month, whereas pulse therapy appears to be safer. It is recommended that liver enzymes are evaluated at baseline and monitored during continuous therapy. The benefits of itraconazole should be weighed against the risks in patients with pre-treatment liver enzyme abnormality or disease.

Itraconazole may be used but it requires longer treatment duration compared to terbinafine and provides only moderate success. Oral ketoconazole should not be used as a first-line therapy for onychomycosis or any other fungal infection because of the risk of severe liver injury and adverse drug interactions. Griseofulvin should be avoided because of its low cure rates. Newer antifungal agents such as ravuconazole and posaconazole are currently being studied and may be available in the near future.

b) Topical agents

Topical antifungal cream used for cutaneous fungal infections is generally ineffective for the treatment of onychomycosis because it has poor nail plate penetrating ability. It may be beneficial in treating concurrent nail fold disease such as paronychia or tinea pedis secondary to candida. New topical agents in lacquer preparations that are applied as nail polish to the affected nails are currently available. These agents have enhanced penetrating and fungicidal activity with minimal side effects. Lacquer preparations provide prolonged drug contact time on the nail and enhance antifungal concentration by evaporation. Ciclopirox 8% and amorolfine 5% nail lacquers are the two most commonly used topical antifungal agents. Ciclopirox nail lacquer is applied daily to the nail for about 4 months or till clinical cure is achieved. Amorolfine nail lacquer is applied 1 to 2 times a week for 6 months up to 1 year and may produce higher cure rates compared to ciclopirox. The use of nail lacquers as a post-treatment prophylactic agent to prevent recurrence and relapses may also be considered, as two studies have shown benefits, whereas one showed no association.

Monotherapy using ciclopirox and amorolfine lacquers yields lower mycological and clinical cure rates (47-67% and 38-54%, respectively) compared to a combination of systemic and topical therapies (72.3-93.9%). However, monotherapy may be considered in superficial white onychomycosis (SWO), distal nail disease involving less than 50% of the nail, in the absence of dermatophytoma (longitudinal yellow
bands or spikes) and as a long-term prophylactic agent. Topical monotherapy should be avoided if the onychomycosis affects more than 50% of the nail, in proximal subungual onychomycosis (PSO), multiple nail involvement or when lunula of the nail is involved. Systemic agents should be considered if there is no response to topical monotherapy after six months of treatment. Topical ciclopirox is also effective against non-dermatophyte moulds such as Scopulariopsis brevicaulis, Scytalidium dimidiatum, Aspergillus and Acremonium species in addition to dermatophytes and yeast.

c) Combination therapy

Combination therapy may produce better treatment outcomes possibly due to different mechanisms of action and drug synergy. Studies have shown that the combination of oral antifungal agents and topical nail lacquer is more effective in the treatment of onychomycosis. Lecha et al. demonstrated excellent global response (mycological and clinical cure rate) of 94% using combination of 200 mg daily itraconazole (for 3 months) and weekly application of 5% amorolfine nail lacquer (for 6 months). Another well-designed study also demonstrated higher global response rate of 72.3% using a combination of oral terbinafine 250 mg daily for 3 months and weekly 5% amorolfine nail lacquer for 15 months compared to terbinafine monotherapy for 3 months (37.5%).

Surgical or chemical nail avulsion (using 40% urea) in combination with oral antifungal is another option. This option is suitable for thick painful nails. However, the procedure itself may cause pain and disfigurement of the nail. The overall clinical results using this mode of therapy may not be satisfactory.

Newer treatment modalities such as laser, light therapy, ultrasound-mediated delivery of drug system, boosted antifungal therapy all currently under study and may be available in the near future. The current treatment options for onychomycosis are summarised in Table 1.

Table 1. Treatment options for onychomycosis

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Duration</th>
<th>Contraindication/Adverse effects</th>
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<tbody>
<tr>
<td><strong>ORAL</strong></td>
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<tr>
<td>Terbinafine</td>
<td>Continuous dosing 250 mg daily</td>
<td>6 weeks for fingernails 12 weeks for toenails</td>
<td>Contraindicated in pregnancy</td>
</tr>
<tr>
<td></td>
<td>OR Pulse dosing 500 mg daily for 1 week followed by 3-weeks drug-free period (1 pulse)</td>
<td>2 pulses for fingernails 4 pulses for toenails</td>
<td>Gastro-intestinal disturbances</td>
</tr>
<tr>
<td>Itraconazole</td>
<td>*Continuous dosing 200 mg daily</td>
<td>3 months</td>
<td>Contraindicated in pregnancy</td>
</tr>
<tr>
<td></td>
<td>OR Pulse dosing 200 mg twice daily for 1 week followed by 3 weeks of the drug-free period (1 pulse)</td>
<td>2 pulses for fingernails 3 pulses for toenails</td>
<td>Used with caution in congestive cardiac failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Drug-induced hepatitis and gastro-intestinal disturbances</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Drug interaction with statins, benzodiazepines and anticoagulants</td>
</tr>
<tr>
<td><strong>TOPICAL</strong></td>
<td>Ciclopirox 8%</td>
<td>Applied daily on nail For 4 months</td>
<td>Minimal local irritation</td>
</tr>
<tr>
<td>Amorolfine 5%</td>
<td>Applied 1 to 2 times a week on nail</td>
<td>For 6 months to 1 year</td>
<td>Minimal local irritation</td>
</tr>
</tbody>
</table>

Minimal local irritation
Prognosis

The morphology of the nail, causative pathogen, host and environment factors influence the treatment outcome of onychomycosis. The superficial white onychomycosis (SWO) type has the best treatment outcome compared to the other types of onychomycosis. Larger area of nail involvement such as total dystrophic type and involvement of the lateral edge of the nail predicts poorer prognosis.

The presence of sub-ungual hyperkeratosis also predicts poor treatment outcome as these contain air pockets, which facilitate the survival of dormant fungal spores. These spores form dermatophytoma, which is refractive to antifungal treatment. Dermatophytoma is clinically identified as longitudinal yellow bands also known as spikes seen in the nail plate.26 Other factors such as older age, immunosuppression, poor peripheral circulation and infection with non-dermatophyte moulds also predict less favourable treatment outcome.4,14

Treatment end point

Treatment success is difficult to measure as the definition of cure for onychomycosis is variable. Mycological cure generally refers to the absence of fungi post-treatment, detected on microscopy using potassium hydroxide or by culture. Clinical cure measures the percentage of nail free from clinical signs of fungal infection based on nail morphology such as thickened nail plate, discolouration, onycholysis and subungual hyperkeratosis measured post-treatment. Complete cure or global response refers to the combination of clinical and mycological end points. Variable study designs and inconsistent definitions of cure stated in the literature results in a wide range of documented treatment responses in various trials. This makes the evaluation and comparison of cure for onychomycosis difficult.4

After treatment initiation, clinically normal nail plate can be seen growing at the proximal end of the nail. The duration for the entire nail to grow and appear normal may take anytime between 6 months for the fingernails and up to a year or more for toenails. This is the average nail plate growth turnover rate, which is the time taken to replace the damaged nail. Ageing, consumption of chemotherapeutic drugs such as methotrexate or azathioprine and pre-existing nail diseases such as yellow nail syndrome, lichen planus and onychomycosis itself can slow down the linear growth of nails and hence delay the much anticipated treatment response.27

Recurrence, relapse, prophylaxis and prevention

Recurrence of onychomycosis after treatment is quite common occurring in about 10% to 53% of cases.10 Recurrence could be either due to relapse, which is due to inadequate or inappropriate treatment or re-infection, which is a new infection after completing treatment. Recurrence of onychomycosis secondary to non-dermatophyte moulds is common because of the lack of definitive treatment for these fungi.3 A meta-analysis of five trials found that relapses are more common after treatment with itraconazole compared to terbinafine.28 Pulse itraconazole therapy showed a relapse rate of 22%, whereas continuous treatment with terbinafine showed a relapse rate of 9%. In cases of relapse, a second treatment with the same dose of terbinafine conferred high mycological and

<table>
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<th>Dose</th>
<th>Duration</th>
<th>Contraindication/Adverse effects</th>
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</thead>
<tbody>
<tr>
<td>COMBINATION TREATMENT</td>
<td>Combination 1</td>
<td>Itraconazole 200 mg daily <strong>PLUS</strong> Weekly application of amorolfine 5% nail lacquer</td>
<td>3 months 6 months</td>
</tr>
<tr>
<td>OR</td>
<td>Combination 2</td>
<td>Terbinafine 250 mg daily <strong>PLUS</strong> Weekly amorolfine 5% nail lacquer</td>
<td>3 months 15 months</td>
</tr>
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*Drug-induced hepatitis is more common with continuous therapy of itraconazole when used for more than 1 month.*
clinical cure rates (92% and 76%, respectively) at 18 months.\(^\text{10}\) Drug resistance to antifungal agents may cause concern, as some studies have demonstrated this possibility.\(^\text{29,30}\)

Prevention of onychomycosis includes adequate treatment of any concurrent tinea, screening and treating family members for co-existing tinea.\(^\text{3}\) Recurrences can be prevented by improving feet hygiene, that is, keeping it dry, trimming nails short, using regular topical antifungals and avoid walking barefoot.\(^\text{28}\) Post-treatment prophylaxis with topical lacquer amorolfine may also be considered.\(^\text{39}\)

**Non-dermatophyte moulds**

A special mention of non-dermatophyte mould (NDM) is warranted as it is a common pathogen isolated in cases of onychomycosis in tropical climates.\(^\text{31,32}\) The presence of NDM by culture poses a diagnostic dilemma as these pathogens are sometimes considered as contaminants. Hence, isolation of NDMs such as *Aspergillus* or *Fusarium* may require repeat cultures. In the presence of sequential cultures yielding similar pathogens, heavy growth colonies and a positive direct microscopy, a clinical correlation is required to determine its significance.\(^\text{33}\) Six major criteria are generally used for the identification of NDMs. These are microscopic identification of the NDM using potassium hydroxide (KOH) preparation, isolation by culture, repeat isolation by culture, inoculum counting, failure to isolate a dermatophyte in culture and histology.\(^\text{23}\) Gupta et al. have recommended using three out of these six criteria for a definitive diagnosis of NDM. These are microscopic identification of the NDM using potassium hydroxide (KOH) preparation, isolation by culture, repeat isolation by culture, inoculum counting, failure to isolate a dermatophyte in culture and histology.\(^\text{23}\) Hence, in primary care practice, identification of NDM by microscopy in the office as well as sequential positive fungal culture of the same pathogen can be used to diagnose NDM as the causative agent for onychomycosis. Currently, there is yet a single effective treatment agent against these pathogens. Recent literature suggests that terbinafine and itraconazole are efficacious agents for NDMs, especially *Scopulariopsis brevicaulis* and *Aspergillus* species. Topical ciclopirox may be beneficial against *Scopulariopsis brevicaulis*. A combination of different modalities of treatment such as systemic, topical and nail avulsion may also be considered.\(^\text{23}\)

**Conclusion**

Medical management of onychomycosis is challenging and often frustrating due to the unpredictable treatment outcome. At times, low rates of clinical cure and high rates of recurrences may be experienced. An accurate diagnosis of onychomycosis that fulfils both the clinical and laboratory criteria is mandatory before initiating treatment in view of long treatment duration and the potential side effects of the antifungal agents. While current evidence supports the use of terbinafine or itraconazole as effective therapies, the combination of oral antifungal and topical nail lacquer may prove to be more effective. The isolation of NDMs from nail culture may predict a less favourable treatment outcome than the current available treatment options are less effective against these pathogens. Management of onychomycosis should include the assessment of patient's expectations prior to starting treatment and explanation that treatment may not restore the normal appearance of the nail. Patients should also be informed of the lag time before treatment results can be appreciated and the risk of having recurrences. Knowledge of the currently available treatment options, awareness of patients' expectations and understanding the possible treatment outcomes will help physicians achieve realistic treatment goals. With all these issues addressed, the management of onychomycosis may prove to be a more rewarding experience for both patients and physicians.

**References**

Involvement of practice nurses and allied health professionals in the development and management of care planning processes for patients with chronic disease – A pilot study

Jones KM, Adaji A, Schattner PS

Abstract

Introduction: Medicare items were introduced in 2005 to encourage general practitioners (GPs) to involve other healthcare providers in the management of patients with chronic disease. However, there appears to be barriers to converting financial incentives and the use of information technology as a communication tool to better patient outcomes. The aim of this study was to explore these barriers from the perspectives of practice nurses and allied health practitioners.

Methods: Three focus groups were held, comprising a convenience sample of 10 practice nurses and 17 allied health professionals from south-east Melbourne.

Findings: Findings were reported under five themes: (1) attitudes and beliefs, (2) communication using care planning documents, (3) electronic communication, (4) care planning and collaboration between healthcare professionals and (5) ongoing challenges.

Conclusion: While allied professionals use care planning tools, there is confusion about the extent to which these tools are for the GPs to provide structured care to assist with communication or funding mechanisms for allied health services. Further research is needed on the contributions of these groups to the care planning process and how communication and collaboration between healthcare professionals can be strengthened.

Introduction

The healthcare system in Australia is complex with a mix of Commonwealth and State Government funded services and services supported by private health insurance. Medicare is the Commonwealth Government’s universal health insurance scheme, which was introduced in 1984 and is partially funded by an income tax levy. Despite providing substantial funding for public hospitals, it also gives subsidies to doctors working outside the public hospital system. In certain circumstances, allied health practitioners, dentists and psychologists can have the rebates for their fees paid by Medicare. One of the circumstances when patients can obtain rebates for attending allied health practitioners occurs when they have a chronic medical condition with complex needs and they are referred by their GPs. The referral must include the creation of a care plan. A care plan is a written, comprehensive and longitudinal plan of action that sets out the health care needs of a patient and the type of services and support required to meet these needs.
also written plans and cover cases where the GP needs to involve multiple healthcare providers; they are designed to make allied health services more affordable by providing Medicare funding for five allied health treatment sessions per patient per year. Together, GPMPs and TCAs are intended to improve access to services for patients with chronic illness.8-11

Patients struggling with chronic disease(s) require planned, regular interactions with caregivers who are linked by clinically relevant information systems and continuing follow-up.12 While a coordinated approach provides optimal management of chronic disease(s),13 it has also been suggested that it rarely results in genuine collaboration.9 This may be due to a number of reasons including requirements making coordination unwieldy,9 poor understanding and use of the Medicare items,14 shortage of appropriately trained practice nurses (PNs) and uncertainty about their roles,14-16 additional paperwork required,15 complex and inconsistent care planning templates,3 challenges with using computers in general practice,17 lack of patient access to and limited use of technology,18-20 time constraints and difficulty communicating with other health providers21 and GPs rarely discussing care planning with other providers.9

It is clear that as technology use increases and healthcare delivery processes change,22 communication between GPs and service providers is important23 because the quality of information exchange has an impact on patient outcomes.24 In addition, efficient practice systems are important to assist GPs to make clinical decisions and to make links with community resources and services.20 Along with effective communication, the use of information technology (IT) through secure websites25-27 for health information exchange may assist in addressing some of the barriers to effective management of patients with chronic disease(s).26

While there is literature published about the introduction and merits of GPMPs and TCAs8-11,13,14 and clinicians22 and patients about web-based care planning,18-20 limited literature was found describing PNs’ views and experiences,22 and no literature was found describing allied health professionals’ (AHPs) perspectives.

The aim of this study was to investigate PNs’ and AHPs’ views and experiences of their involvement in the development and management GPMPs and TCAs.

Methods:

Study methodology: qualitative vs. quantitative

A qualitative methodology was chosen to gain in-depth insight28,29 into the various health professionals’ experiences of their involvement in the development and management of GPMPs and TCAs.

Study design: in-depth FGS

Focus groups were chosen because the researcher can explore a small group of participants’ in-depth knowledge, and compare experiences and views.28,29

Setting

All three focus groups were held in the Monash Division of General Practice (a local organisation funded by the Commonwealth Government to provide educational support to general practice staff) located in south-east Melbourne. This organisation was selected because of the professional relationship with the research team from Monash University and its central location for participants to travel to.

Participants – inclusion and exclusion criteria

Participants self-selected involvement by (a) responding to the invitation and (b) by attending a focus group. There were no other inclusion or exclusion criteria.

Sampling and recruitment

A convenience sample28,29 was recruited via the Monash Division of General Practice who circulated invitations to all practice nurses and allied health professionals on their database. Interested personnel responded back to the research team, providing an email address and/or a telephone number for the purpose of contact to advise time, date and venue of the focus.

Research instrument

Following a review of the literature on the involvement of PNs and AHPs, and the development and management of GPMPs and TCAs,3,5,8,11,13,14,17-27,30-33 a semi-structured interview schedule was developed comprising five themes (Table 1).

Data collection

Three focus groups were held in July 2009. All were of 2 hours’ duration and included a brief demonstration of a web-based care planning tool as an example of an option to using paper-based tools. The first comprised seven PNs. The second comprised 11 AHPs (five podiatrists, four dieticians and two diabetes
Data analysis

Data were manually and systematically analysed according to the Framework Method, which involves a five-stage inductive and deductive process of becoming familiar with the data by reading the transcripts to recognise recurring words and themes, and interpreting the themes to understand participants’ perspectives. Two team members (KJ and PS) independently coded the transcript, guided by the five themes used in the focus groups. When there was a difference in opinion, the issues were discussed until agreement was reached. No data management software was used.
The findings are reported under the five focus group themes. In this study, the term ‘care planning’ refers to the Medicare items known as GPMPs and TCAs. During the focus groups, the terms ‘care planning’ and ‘GPMPs’ or ‘TCAs’ were used interchangeably. Comments made by participants are identified by noting the focus group (FG1-3) and whether the comment was made by a PN or APH.

Medical ethics approval

This research was approved by the Monash University Human Research and Ethics Committee (MUHREC) CF09/0897:2009000418.

Results

Attitudes and beliefs on care planning, general practice management plans (GPMPs) and team care arrangements (TCAs)

Most participants agreed that the concept of care planning was good and should improve patient care. However, several indicated that there appeared to be a lot of unsatisfactory ‘paperwork’, resulting in either too much information being provided or that clinical goals and strategies were not sufficiently individualised for specific patients.

“There is so much paper that comes out of my fax machine of which only the top sheet and the bottom are relevant. Everything in between is a requirement” (FG2 AHP).

PNs and AHPs working in private and public organisations had different experiences. Those working in community health services reported that they could not access Medicare funding available for TCAs, even though GPs asked them to be a part of a care team. This meant they provided feedback to GPs even though they were not specifically funded to do so, and did not gain any direct benefit from it.

“There’s an expectation for AHPs to provide feedback, but often we feel there’s no reason to write long reports that justifies the time spent on follow ups just to complete the care planning cycle because our agency doesn’t get anything for it, yet it’s a lot of time we could be spending looking after another client potentially” (FG3 AHP).

Participants suggested that healthcare professionals still do not really talk to each other. Most doubted whether patients understood the purpose of care planning and the content of the documents, particularly as the document format was not patient-friendly. They thought that there were too many boxes and they looked too technical.

“I think they [care plans] are not in patient language” (FG 2 PN).

Electronic communication

Opinion was divided about whether electronic communication was a specific enhancer of inter-professional communication. Some thought email is a useful tool although it risked an excessive flow of information.

“In terms of preparing the care plan, if you can do it all online and send it to each different provider, it saves a huge amount of time in general practice” (FG3 AHP).
Of importance, not all had regular access to email and most felt that patients would be quite unlikely to want to contribute to their personal GPMPs or TCAs via computers, in part, because people with chronic diseases are generally older and therefore often less comfortable with electronic communication.

“I’m not always accessibly on the web, I’m not always in a place where the computer is online and I think it becomes very unwieldy. I think it’s fine if you are in a location, so if you are here all the time, then it’s easy, but I am not, I move around, so I don’t think it’s practical” (FG3 AHP).

Other frustrations about email included the need to encrypt patient information in an environment with incompatible programmes. Lack of hardware was an issue; not all AHPs had access to computers, and not all had online access at all of their practice locations. After a web-based tool was demonstrated, most commented that while this tool might have some advantages and was clearly the ‘way of the future, participants were skeptical about the likelihood of many GPs and health professionals wanting to learn yet another computer program. Concern was also expressed on whether this or any other web-based tools are compatible with the various clinical software programs available, with most expressing reluctance on having to use different systems in parallel.

“It’s a problem if the internet is down (FG2 AHP).

That’s what lets us down and it’s not just the frustration, it actually impacts on patient care if you don’t communicate. Things get repeated and unnecessary conversations occur (FG1 PN).

4. Care planning and collaboration between healthcare professionals

Most accepted the concept of a healthcare ‘team’, which includes the AHPs involved in patients’ care, and many thought TCAs brought AHPs and GPs a little closer, resulting in more communication and coordination than was previously the case.

“It definitely would improve communication, so people would know who they players are (FG2 PN)

Participants were surprised that GPs might be annoyed or frustrated when patients asked them ‘for a referral’ to access AHP services that are subsidised by Medicare funds. Participants thought GPs were in the best position to know about Medicare eligibility, and therefore felt it was reasonable to refer patients to the GP to seek advice in this regard. At the same time, many participants felt that patients often did not seem to understand why they were referred to allied health professionals as many patients did not return for follow-up. PNs felt the process worked best if they personally reviewed the patients rather than trying to develop the GPMP or TCA from the existing medical record. Having the patient present was particularly useful in developing individualised, realistic goals and strategies. The nurse’s ability to develop a GPMP was further enhanced by conducting a formal ‘health assessment’ for older patients when relevant, and using the appropriate Medicare item number for that assessment.

“I think that it’s great if I can access all that [information] - that would be good” (FG3 AHP).

The best care plan comes just following a health assessment I agree with you. You know absolutely everything; you know their family support … it’s a very comprehensive care plan you have to write after you’ve done a health assessment (FG1 PN)

Most agreed that a barrier to collaboration was that patients do not always remain with the same GP or, they may consult more than one GP. Some patients endeavour to ‘play the system’ and obtain separate TCAs from different GPs so that they can have additional visits to AHPs. When Medicare rejects payment for these extra visits, AHPs are left out of pocket or with ‘bad debts’.

“The trouble is now lots of patients have different GPs; they’ll go to a variety of doctors and it does make it really hard when you’re doing the care” (FG3 PN).

“Community health, for example, doesn’t get any funding for the Medicare so there’s only certain visits that can be used for clients” (FG2 AHP).

The majority agreed that a bureaucratic process that involved paper shuffling could not possibly improve care management to such an extent that it would lead to health benefits. It was felt that the focus on increasing access to AHPs via Medicare funding has led to distortions in the care planning process.

“I think what has changed is that a lot of patients are accessing allied health services which they probably didn’t before care plans” (FG1 PN).
**Ongoing challenges**

While most agreed that increased electronic communication in the health sector was inevitable, there were many problems still needed to be overcome.

Communication between AHPs and GPs remains difficult with or without the care planning process. Participants found it challenging to know when to provide feedback to a GP, particularly when they were uncertain whether the patient would return to the referring GP for follow up. If feedback should be provided at the end of a series of visits, as per the TCA guidelines, then a report might slip through if the patient does not attend an appointment.

*There is too much communication. There’s a danger of that, I can see (FG 2 PN).*

It was felt that difficulties such as these are not solved by the current care planning process or by electronic communication.

**Discussion**

This study focused on experiences with care planning in Australia. It is difficult to compare these with other countries because of differences in healthcare systems, including funding models. There are also differences in training and education, and the roles of allied health professions as well as practice nurses' qualification requirements and roles. Nonetheless, many of the issues and concerns raised in the findings of this study may provide lessons for the international community.

Most of the practitioners were from private practice and as Medicare funding is for GPs working in this capacity, these participants are likely to represent a cross-section of the views of PNs and AHPs from metropolitan practices. Publicly funded practitioners also use care planning as a part of good clinical practice within their organisations.

One barrier is the lack of understanding of how the process works from the perspective of Medicare item requirements. While these health professionals understood the value of good communication, there was only guarded confidence that the current system contributed to this; participants frequently reverted back to the conceptual and practical problems experienced when using GPMPs and TCAs.

There was a clear message from the three focus groups that neither a web-based format nor alternative forms of electronic communication can be separated from other aspects of care planning because all aspects need to be considered together, including the understanding that patients do, or do not have knowledge about, or interest in GPMPs and TCAs. While a discussion about the potential benefits of electronic communication elicited considerable interest, participants raised a range of issues that went well beyond communication difficulties. The concept of a GPMP and TCA, the nature of inter-professional engagement, the time and financial pressures in clinical practice, and most importantly, the need to have the patient at the centre of the process, all add layers of complexity to chronic disease management.

Limitations of this pilot study must be noted. While the participant number is relatively small (27 participants), this work provides insight into the views and experiences of PNs and AHP, which were rarely reported before. In addition, there were no participants from rural areas where a lack of services may be the major challenge. Publicly funded practitioners were also under-represented, thus, it was not possible to explore whether there were differences between those employed in private and/or public practice.

**Conclusion**

This study confirmed that not all health professionals have the same requirements for information from GPs, and that PNs will tend to see things from their own particular domain. Communication systems vary between different clinics and organisations, and technical factors can influence those who are being asked to reflect on the broader issues involved in team-based care planning.

This study suggests that while PNS and AHPs acknowledge that the use of GPMPs and TCAs has some merit, there is confusion about the extent to which GPMPs and TCAs are tools for the GP to provide more structured care, to assist communication with a broader care team, or are funding mechanisms for allied health services. It appears that effective communication and the use of information technology (IT) for health information exchange may assist in addressing some of the barriers to effective management of patients with chronic diseases, provided that efficiency is not lost.
Further research is needed to gain additional insight to the contributions of these two important groups to the care planning process and patient care, and to how communication between healthcare professionals can be strengthened.

Acknowledgement

We thank the practice nurses and allied health professionals who participated in the focus groups and Monash Division of General Practice for assisting with recruitment and providing the focus group venue.

How does this paper make a difference to general practice?

- Communication continues to be a problem between general practitioners (GPs) and allied health professionals, particularly if patients do not remain with the same GP.
- Opinion was divided about whether electronic communication enhanced inter-professional communication or not.
- The majority agreed that the concept of a healthcare team includes allied health professionals.
- Although most agreed that increased electronic communication in the health sector was inevitable, there were many problems that still needed to be overcome.

References

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Conflict of interest

There was no conflict of interest for all authors.


Introduction

Psoriasis is a genetically determined, systemic immune-mediated chronic inflammatory disease that affects primarily the skin and joints. It has been estimated to affect 1-3% of the general population worldwide. There are several distinctive clinical sub-types of psoriasis. Psoriasis vulgaris (Figure 1), the most common type, is seen in 89% of the 6895 patients registered in the Malaysian Psoriasis Registry.\textsuperscript{1} Psoriatic arthritis is present in 15%. Patients with psoriasis, particularly those with severe disease, are more prone to depression, metabolic syndrome or the individual component of metabolic syndromes namely obesity, diabetes mellitus, dyslipidemia, and hypertension.\textsuperscript{2-6} Young adults with severe psoriasis have a 3-fold increased risk of developing myocardial infarction (MI) and a reduction of 3-4 years in life expectancy.\textsuperscript{3,4,7} There is also increasing evidence that controlling chronic inflammation of psoriasis with systemic agents or biologics reduces cardiovascular co-morbidities.\textsuperscript{3,5-10} Effective treatments are available. Unfortunately, surveys showed that patients frequently received suboptimal care or were on ineffective treatment for longer than necessary.\textsuperscript{11,12} To improve care of patients living with psoriasis, the Malaysia Health and Technology Assessment Section of the Ministry of Health recently published a clinical practice guidelines (CPG) for the Management of Psoriasis Vulgaris in adults.\textsuperscript{13} The aims of this CPG are to assist clinicians and other healthcare professionals (HCPs) in making evidence-based decisions on the management of psoriasis and to implement treatment goals to improve outcome of patients living with psoriasis. This article summarises recommendations on the assessment and management of psoriasis that are relevant to the primary HCP.

Figure 1. Well demarcated erythematous plaques with silvery scales on extensor surfaces of arms

Figure 2. Erythrodermic psoriasis: Generalised redness with thick scales on back

Figure 3. Generalised pustular psoriasis showing erythematous plaques studded with pustules commonly induced by systemic corticosteroid
Psoriasis is diagnosed clinically. Psoriasis vulgaris, the most common type of psoriasis, is characterised by well demarcated erythematous plaques with silvery scales on extensor prominences (Figure 1) and lumbosacral region. Scalp and nail involvements are useful clues to diagnosis, being present in up to 80% and 60% respectively of patients with psoriasis. Guttate psoriasis is usually seen in children and adolescents after an upper respiratory tract infection and is characterised by multiple small plaques of psoriasis. Two rare but potentially life-threatening phenotypes are erythrodermic psoriasis (Figure 2), which is extensive psoriasis affecting more than 80% body surface area and generalised pustular psoriasis, characterised by widespread erythema studded with superficial pustules, which may coalesce to form lakes of pus (Figure 3).

Commonly encountered differential diagnosis of psoriasis vulgaris includes seborrhoeic dermatitis, tinea corporis, atopic dermatitis and discoid eczema. Seborrhoeic dermatitis classically affects scalp, supraorbital ridges, nasolabial folds, paranasal gutters, central chest and central upper back. On the scalp, scaling of seborrhoeic dermatitis is more diffuse with fine, greasy scales whereas the sharply demarcated psoriatic plaques, which tend to extend 1-2 cm beyond the hairline, have coarser and thicker scales. Lesions in atopic eczema are less demarcated and located on flexural areas such as antecubital and popliteal fossa. Discoid eczema, preferentially affects the extremities and is very pruritic. Tinea corporis is characterised by annular plaques and may be confused with resolving annular psoriatic lesions. However, diagnosis of tinea corporis is easily confirmed by a positive skin scraping for fungal hyphae. Mycosis fungoides is an uncommon cutaneous T-cell lymphoma, which should be distinguished from psoriasis vulgaris. Classic mycosis fungoides is divided into three stages: patch, plaque and tumour stage. Unlike the well-demarcated plaques seen in psoriasis, patch/plaques of mycosis fungoides have varying borders. Diagnosis is sometimes difficult because the early patch and plaque stage resembles eczema or psoriasis and may not demonstrate classic histological features. A close clinico-pathological correlation is necessary to confirm the diagnosis of mycosis fungoides. If there is any diagnostic doubt, patients should be referred to a dermatologist for further assessment. Skin biopsy may occasionally be needed to confirm psoriasis with atypical presentations and to rule out other conditions.

**Risk factors**

The most significant risk factor for psoriasis is having a family history of psoriasis. Other risk factors include obesity, smoking, recent infection, alcohol consumption of more than five drink/month in men and skin injury (koebner phenomenon). Although there is a lack of good evidence linking drugs to psoriasis, it is prudent to avoid drugs such as NSAIDs, beta-blockers and lithium which had been reported to aggravate/trigger psoriasis. Systemic corticosteroid should also be avoided because it has been repeatedly implicated as the most common cause of potentially life-threatening generalised pustular psoriasis.

**Identification of psoriatic arthritis and other comorbidities**

Psoriatic arthritis affects 6 to 42% of patients with psoriasis. Skin lesions precede arthritis in about 75% of cases. Hence, HCPs who take care of patients with psoriasis are very well-placed to identify onset of arthritis in their patients. Early diagnosis is important because psoriatic arthritis is aggressive and is associated with progressive joint damage. HCPs should perform regular assessment for associated arthritis in their psoriasis patients by eliciting a history of significant morning stiffness, joint pain and/or swelling to facilitate timely referrals to rheumatologists. Psoriasis, like other diseases associated with chronic systemic inflammation such as rheumatoid arthritis and systemic lupus erythematosus, carries a higher risk of cardiovascular morbidity and mortality. Hence, all patients with psoriasis should be regularly assessed for metabolic syndrome and other classic risk factors of atherosclerosis-related diseases. Assessment of patient with psoriasis should also include psychosocial measures since patients with psoriasis have higher risk of depression, anxiety, and suicidal ideation especially in severe disease.

**Principles of care**

The treatment of psoriasis should be a combined decision between patients and their HCPs. Management should start with patient education (Algorithm 1). Adequate information on their disease and current available treatment options are necessary to enable patients to make informed decisions regarding their care. The choice of treatment should be individualised based on patient’s preference, disease severity, available treatment options.
options and the risk-benefit of treatment. The goal of treatment is to improve and maintain patients’ health-related quality of life (QoL) through control of symptoms and signs of psoriasis. Treatment goal and minimal target set should be monitored regularly to detect loss of response, which may necessitate modification of therapy. Implementing and regular monitoring of treatment goals are necessary to ensure long-term effective treatment.

Table 1. Assessment of psoriasis severity and referral criteria for specialist care

- Assess severity of psoriasis and its impact on patient's quality of life
  - at first presentation
  - when assessing effectiveness of treatment
  - before referral for dermatologist/rheumatologist care
- Measure severity of psoriasis by documenting percentage of body surface area affected (%BSA) and/or DLQI score
- Assess for early arthritis on presentation and then at least yearly by looking for significant morning joint stiffness, dactylitis and joint swelling
- Assess regularly for metabolic syndrome and risk factors of atherosclerosis-related diseases
- Classify severity into mild, moderate or severe psoriasis
  - Mild psoriasis (BSA or PASI or DLQI < 10)
  - Moderate psoriasis (BSA >10 to 30% or PASI >10 to 20 or DLQI >10)
  - Severe psoriasis (BSA>30% or PASI >20 or DLQI >20)
- Criteria for dermatology referral
  - Diagnostic uncertainty
  - Erythrodermic (Figure 2) or generalised pustular psoriasis (Figure 3) should be referred urgently for specialist assessment and treatment
  - Patients who have failed adequate trial of topical therapy for 6-12 weeks
  - Moderate to severe psoriasis that requires phototherapy or systemic or biological therapy
- Criteria for rheumatology referral
  - Diagnostic evaluation of patients with suspected arthritis
  - Formulate management plan for psoriatic arthritis

Table 2. Key recommendations relevant to primary healthcare professionals

- Patients with psoriasis or PsA should be encouraged to adopt a healthy lifestyle
  - Regular exercise
  - Maintain healthy body weight (Body Mass Index 18.5–24.9)
  - Stop smoking
  - Avoid alcohol or drink in moderation
- Patients with mild or moderate psoriasis with minimal impairment in quality of life (DLQI≤5) should be treated with topical agents
- Emollient should be used regularly
- Tar-based preparations may be used as a first-line topical therapy
- Short-term use of potent and very potent topical corticosteroid may be used to clear limited plaques. (Grade A)
  - Avoid use on the face, genitalia and body folds
  - Limit use of super potent corticosteroid to less than 30 g/week
  - Limit use of potent corticosteroid to less than 60 g/week
  - Continuous use of potent corticosteroid should not exceed 4 weeks
  - Continuous use of super potent corticosteroid should not exceed 2 weeks
- Mild potency corticosteroid may be used for face, genitalia and body folds
- Vitamin D analogue may be used for short-term treatment
  - Limit use to less than 100 g/week
- Fixed dose combination of vitamin D analogue and corticosteroid may be used for short-term treatment
- Review patient 6 weeks after starting a new topical agent
  - Evaluate tolerability and initial response to treatment
  - Reinforce the importance of adherence when appropriate
  - Reinforce the importance of a not using potent or very potent corticosteroids long term
  - If there is little or no improvement at this review
  - Discuss next treatment options (refer dermatologist or change to another topical agent)
Assessment of disease severity

Assessment of patients with psoriasis should include measurement of the physical severity of the disease and its impact on patients’ quality of life (Table 1). Both measurements are important to ensure that patients are directed towards appropriate services that meet their individual needs in order to minimise morbidity. Severity of psoriasis and its impact on patient’s QoL should be measured on first presentation, during evaluation of the effectiveness of interventions, before referral for specialist care and at each referral point in the treatment pathway (Algorithm 1). There are no biomarkers for disease severity, so measurement is based on clinical evaluation of the skin. Physical severity of psoriasis may be measured by calculating the percentage of body surface area involved (BSA) using “rule of nine” or by taking patient’s one palm size (flat hand with apposed thumb and fingers) as 1%. Psoriasis area and severity index (PASI) is common tool used for assessing the severity and response of psoriasis to new treatment. PASI measures the severity of skin lesions (i.e., degree of erythema, scaling and induration of lesions) and extent of involvement in four regions (head and neck, upper limbs, trunk and lower limbs). Score range from 0 to 72. PASI is the recommended tool to measure response of psoriasis to treatment with biologics.

Dermatology life quality index (DLQI) is recommended to measure the impact of psoriasis on patient’s QoL. It is a 10-item dermatology-specific questionnaire that measures impact of skin disease and its treatment on patient’s life (Appendix 1). DLQI assesses itch, pain, feeling of embarrassment, problems with treatment, interference with daily life, relationship and sexual activity. Score ranges from 0 to 30 where 0 to1 means no effect at all, 2 to 5 small effect, 6 to 10 moderate effect, 11 to 20, very large effect and 21 to 30 extremely large effect on QoL. Severity of psoriasis should be classified into mild, moderate or severe psoriasis to determine optimal treatment approach (Table 1).

Treatment goals and options

Treatment goals are routinely used in many chronic medical diseases to measure efficacy of therapy and to prevent complications due to uncontrolled disease activity. For instance, HbA1c is the treatment goal for diabetes mellitus and a blood pressure of <140/90 is the treatment goal for hypertension. One important consequence of uncontrolled diabetes mellitus and hypertension is cardiovascular morbidity and mortality. Severe psoriasis is also significant risk for cardiovascular morbidity and mortality. Patients with severe psoriasis have a 3-4 year reduction in life-span which is similar to patients with uncontrolled hypertension. Hence, it is necessary to treat psoriasis like other chronic diseases by implementing and monitoring treatment goals based on disease severity to ensure appropriate and adequate long-term effective treatment.

Topical therapy is the first-line treatment for mild-to-moderate psoriasis. Second-line therapy includes phototherapy with broad- or narrow-band ultraviolet (UV) B light or psoralen plus UVA light (PUVA). Conventional systemic agents such as cyclosporin, methotrexate and acitretin are offered if phototherapy is not available, impractical for patients or when patients did not respond or could not tolerate phototherapy. Biologics is only recommended for patients with severe psoriasis who have failed or have contraindication or intolerance to conventional systemic therapy.

For all treatment modalities, our goal is to help patient achieve a DLQI ≤5, that is, psoriasis should just have small or no effect on patient’s life after treatment. For topical therapy, initial response is evaluated at week 6. If patient achieved 50% or more reduction in BSA involvement, treatment should be continued and effectiveness should be regularly monitored every 6-12 to detect loss of response which may need treatment modification (Algorithm 1). If treatment goal is not achieved, DLQI should be assessed. If DLQI ≤5, topical treatment should be optimised by ensuring adherence or adding/switching to another topical agent. If DLQI >5, patients should be offered dermatology referral. Table 2 summarises key recommendation relevant to primary HCP.

Implications and implementations

Psoriasis is no longer just a skin disease. It is a chronic inflammatory systemic disease with significant cardiovascular morbidity and mortality. Adequate treatment of psoriasis is cardioprotective. Implementing and regular monitoring of treatment goals is necessary to ensure adequate and effective long-term control. The main barrier to successful implementation of this guidance is likely to be insufficient training or understanding about psoriasis among HCPs, as undergraduate dermatology training is rudimentary. Formal assessment of psoriasis with BSA/PASI/DLQI and implementation of treatment goal is a substantial change in approach since there is, currently, no culture to measure skin diseases with validated tools and no treatment standard.
Appendix 1. Dermatology Life Quality Index

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<th>DERMATOLOGY LIFE QUALITY INDEX</th>
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The aim of this questionnaire is to measure how much your skin problem has affected your life OVER THE LAST WEEK. Please tick one box for each question.

1. Over the last week, how itchy, sore, painful or stinging has your skin been?  
   - Very much
   - A lot
   - A little
   - Net at all

2. Over the last week, how embarrassed or self conscious have you been because of your skin?  
   - Very much
   - A lot
   - A little
   - Net at all

3. Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden?  
   - Very much
   - A lot
   - A little
   - Net at all

4. Over the last week, how much has your skin influenced the clothes you wear?  
   - Very much
   - A lot
   - A little
   - Net at all

5. Over the last week, how much has your skin affected any social or leisure activities?  
   - Very much
   - A lot
   - A little
   - Net at all

6. Over the last week, how much has your skin made it difficult for you to do any sport?  
   - Very much
   - A lot
   - A little
   - Net at all

7. Over the last week, has your skin prevented you from working or studying?  
   - Yes
   - No
   - Not relevant

   If “No,” over the last week how much has your skin been a problem at work or studying?  
   - A lot
   - A little
   - Net at all

8. Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives?  
   - Very much
   - A lot
   - A little
   - Net at all

9. Over the last week, how much has your skin caused any sexual difficulties?  
   - Very much
   - A lot
   - A little
   - Net at all

10. Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time?  
    - Very much
    - A lot
    - A little
    - Net at all

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The experience of managing a retroviral antenatal patient in a primary care clinic in Perak, Malaysia

Subashini A, Malliga S, Nooraizam AR

Subashini A, Malliga S, Nooraizam AR. The Experience of Managing a Retroviral Antenatal Patient in a Primary Care Clinic in Perak, Malaysia. Malays Fam Physician 2014;9(1):22-4

Keywords:
HIV infection, mother-to-child transmission, antiretroviral treatment

Introduction

Mother-to-child transmission (MTCT) is the most common mode of HIV infection in children. In the absence of any intervention, 30% to 45% of children born to HIV positive mothers are infected with HIV.1 This case illustrates the successful prevention of MTCT whereby antiretroviral treatment was initiated early in pregnancy, delivery was via lower segment caesarian section (LSCS) and breastfeeding was avoided.

Case report

A 25-year-old heroin user, gravida 3 para 2, single, unmarried, with a history of multiple sexual partners with unprotected sex was presented to the accident and emergency unit of the district hospital complaining of abdominal discomfort. Upon examination, she was found to have premature contractions and was admitted to the obstetric ward. In the ward, her rapid HIV test was positive and this was reconfirmed with positive particle agglutination (PA) and Western Blot tests. She was also tested positive for Hepatitis C.

She was examined by the primary care physician in the primary health clinic at 24 weeks of gestation. Baseline blood tests including full blood count, fasting blood sugar, fasting lipid profile, renal profile, liver function test, CD4 and CD8 T cell counts were performed before initiating antiretroviral treatment. Her CD4 T cell count was 414 cells/µL (32%) at 24 weeks of gestation. She was given pill training and advised on strict adherence to treatment. She was also started on methadone replacement therapy for the heroin addiction at 24 weeks of gestation. She was promptly initiated with short-term antiretroviral therapy (START) with T. Zidovudine-Lamivudine combination of one tablet twice daily and T. Lopinavir-Ritonavir combination of three capsules twice daily by the visiting infectious disease physician. Viral load level was planned at 34 weeks of gestation. As she had moderate iron deficiency anaemia with a haemoglobin level of 9.3 g/dL, she was advised to take double haemetinics daily.

She was also advised on healthy and balanced diet. All her antenatal ultrasound scans were normal with no foetal anomalies and corresponded to dates.

Patient was compliant to treatment until 30 weeks of gestation when she defaulted on START and methadone treatment as she experienced occasional vomiting. She had also defaulted follow-up for a week. Therefore, she was referred back to the infectious disease clinic where treatment was reinitiated. She was compliant to treatment until 33 weeks of gestation. At 33 weeks of gestation, she was admitted for reduced foetal movement and was delivered via emergency LSCS. Intravenous Zidovudine was administered 2 hours prior to LSCS and intramuscular dexamethasone for foetal lung maturation in view of premature delivery.

Bilateral tubal ligation was performed with her consent as she was not keen on other long acting contraceptive methods such as implanon. She delivered a healthy baby boy weighing 2.2 kg. Baby was admitted for 2 weeks and syrup Zidovudine 9.8 mg was administered twice daily for 6 weeks. Meanwhile, lactation was suppressed with T. Cabergoline 2 tablets daily for 2 days and the baby was given formula milk. He was screened for HIV and tested negative for all three polymerase chain reaction (PCR) tests and also tested negative for Hepatitis B, C, TORCHES and CMV IgM.

After delivery, she defaulted on her antiretroviral treatment as well as follow-up to the infectious disease clinic. She refused to continue highly active antiretroviral therapy (HAART) and methadone treatment despite counselling by the staff nurse, medical officers and primary care physician of the clinic. Psycho-social issues were addressed by the health staff and the staffs from 'Jabatan...
HIV infection during pregnancy is entitled to free antiretroviral therapy. ARV therapy is given for two reasons during pregnancy: (1) to prevent perinatal viral transmission and (2) to prevent maternal disease progression (therapy continued indefinitely after delivery). Most guidelines recommend that HAART or START should be initiated as soon as possible after 14 weeks of gestation and to allow adequate time interval to achieve viral suppression by delivery, which was done timely for this patient in the primary health clinic. In this patient, START was chosen in view of the CD4 T cell count, which was above 250 cells/µL. This patient had only one CD4 test done at 24 weeks of gestation and her next CD4 monitoring was 4 months later but patient delivered prematurely at 33 weeks of gestation. Hence, the planned viral load done was not done.

Besides timely treatment, adherence to ARV therapy is of vital importance for the success of treatment, and pregnant women will need extra support and planning in this area, especially if there are practical or psycho-social issues that may adversely impact adherence. Adherence to therapy was a challenge for this patient as she had poor tolerance to the side effects of START as well as poor motivation. She had no good family support as she lived in a very small squatter house with her mother and cousin sister who were also drug addicts. Many of the other squatter residents were addicts as well. She, however, had a very good and committed support throughout all the follow-ups at the primary care clinic as well as combined clinic in district hospital.

Transmission risk increases sharply in late pregnancy, during labour and delivery. Overall, about 15% to 20% of children are infected by their mothers during the antenatal period, 50% during delivery and 33% through breastfeeding. The Malaysian Ministry of Health (MOH) initiated a National Prevention of Mother-to-Child Transmission of HIV (PMTCT) programme in 1998. This programme is based partly on UN General Assembly Special Sessions (UNGASS) ‘prong’ 2 (i.e., detection of HIV infection during the antenatal period) and more strongly on UNGASS ‘prong’ 3 (i.e., the provision of ARV therapy to mother and baby, safer modes of delivery and safer infant feeding practices for HIV-positive mothers (through artificial feeding). The programme has aided in the diagnosis of HIV infection in pregnancy as well as in the management of these patients.

In Malaysia, any woman who is diagnosed with HIV infection during pregnancy is entitled to free antiretroviral therapy. ARV therapy is given for two reasons during pregnancy: (1) to prevent perinatal viral transmission and (2) to prevent maternal disease progression (therapy continued indefinitely after delivery). Most guidelines recommend that HAART or START should be initiated as soon as possible after 14 weeks of gestation (and in any case, before 28 weeks of gestation) to avoid the organogenesis period and to allow adequate time interval to achieve viral suppression by delivery, which was done timely for this patient in the primary care and Cure and Care Clinic was launched in Malaysia in 2010. The objective was to provide services to drug abusers, their families, employers and individuals with drug problems. Even though there is a Cure and Care Clinic under the management of National Anti-Drug Agency (AADK) in the district, this patient was not referred as there was a team of health staffs who provided personalised care for her in the clinic itself. The personalised care included management and counselling by the primary care physician, methadone management at the same clinic and home visits by the health staffs, all of which were available in the same health clinic. Patient was continuously motivated and encouraged to take her START daily and symptomatic relief was provided for some side effects she experienced. The clinic staff nurse visited her at her home every time she defaulted follow-up and brought her to the clinic for her antenatal and post-natal visits. The primary care physician and the medical officer of the clinic visited her twice when she failed to visit clinic and was found to be under the influence of drugs.

As for the mode of delivery, several systematic reviews showed that elective caesarean section reduces MTCT. The likelihood of transmission was reduced by approximately 87% with both elective caesarean section and full-course ZDV compared to other modes of delivery. It was found that the risk of vertical transmission was significantly higher (14%-16%) with breastfeeding despite receiving ARV. As
such, babies of HIV-positive mothers should be exclusively formula fed and these mothers should be offered medication to suppress lactation. A circular from the Ministry of Health Malaysia provides free infant formula for 2 years for perinatally exposed babies from low-income families (RM <1200) in the first instance, and case to case basis for such infants whose family income is more than RM1200. This baby was provided free infant formula milk in view of poor socio-economic background. To summarise, MTCT was successfully prevented with the early diagnosis of HIV status, timely ARV treatment by 24 weeks of gestation, delivery by caesarian section and by avoiding breastfeeding.

This case highlights the importance of primary care physician and multidisciplinary team effort leading to the successful prevention of MTCT.

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CASE REPORT

Hoarseness as the sole symptom of an impending thoracic aneurysm rupture?
Jaafar R, Mohamad I


Keywords: thoracic aneurysm, hoarseness, vocal cord palsy

Abstract

Unilateral vocal cord palsy secondary to thoracic aortic aneurysm is a rare occurrence. Direct compression of the enlarging thoracic aneurysm on the left recurrent laryngeal nerve causes neuronal injury of the nerve, which is manifested as hoarseness. We present a rare case of unilateral vocal cord palsy in a 60-year-old healthy gentleman caused by a large thoracic aortic aneurysm. This rare presentation, with a serious underlying pathology might be misdiagnosed or delayed. Therefore, it is important for us to have high index of suspicion in cases with a rare presentation such as this.

Introduction

The cause of unilateral vocal cord palsy varies, ranging from malignancy to surgical injuries and trauma.1 When there is no clear-cut aetiology noted, it is classified as idiopathic. A rare situation in which aneurysm causes unilateral vocal cord immobility has been reported in only about 5% of cases in English literature.2 Patients with thoracic aneurysm are usually asymptomatic at the time of presentation but depending on the location and size of the aneurysm, voice change, chest or back pain can be the main manifestation.1 A unilateral vocal cord palsy usually presents with breathy, low-pitched voice due to incomplete glottic opposition.1 Herein, we experience a rare case of unilateral vocal cord immobility caused by a large thoracic aortic aneurysm. We discuss our experience of this rare case as well as literature review on potential aneurysm rupture in case as such.

Case report

A 60-year-old Malay healthy gentleman presented with hoarseness for 2 months. He also experienced on and off productive cough with mild shortness of breath that was non-worsening. Otherwise, he was a non-smoker and had no recent history of trauma or upper respiratory tract infection. Past medical history was insignificant. Physical examination revealed that the patient has breathy hoarse voice with normal blood pressure and afebrile. The neck, cardiovascular and respiratory examination was unremarkable.

Flexible laryngoscopy revealed left vocal cord immobility in abducted position.

Chest radiograph showed a widened mediastinum (Figure 1). A computed tomography with angiogram scan was carried out and revealed a fusiform dilatation of the aortic arch till descending aorta measuring 6.7 cm at aortic arch and 3.9 cm at descending aorta, with peripheral aortic wall calcification suggestive of a large thoracic aortic aneurysm (Figures 2 and 3). No evidence of dissection or rupture was found.

An elective aneurysm repair was discussed and offered to the patient. However, the patient did not consent to the procedure.

Figure 1. Anteroposterior chest radiograph demonstrating aortic enlargement from distal arch to proximal descending thoracic aorta (arrow) possibility of thoracic aneurysm rupture.
Figure 2. A coronal view of contrast-enhanced computed tomography demonstrates aneurysm from the arch to descending thoracic aorta associated with mural thrombus measuring 3.1 cm at its maximum thickness (arrowhead) as well as peripheral calcification (arrow).

Figure 3. An axial view contrast-enhanced computed tomography shows a huge aneurysm from the aortic arch to descending thoracic aorta with peripheral calcification (arrow).

Discussion

Aneurysm can be divided into true and pseudoaneurysm. All three layers of the aortic wall are involved in true aneurysm, whereas pseudoaneurysm contains adventitia or paraaortic connective tissues. Depending on aetiology, aneurysm can be focal/saccular or diffuse/fusiform in which the saccular type is usually caused by infections or post-trauma, whereas fusiform type is always associated with atherosclerosis. An aneurysm has the tendency to rupture or dissect. The most common presenting symptom for a rupture or dissection is severe chest pain that radiates to the back, neck or shoulder and computed tomography imaging demonstrates displacement of mural calcification, haemomediastinum, haemothorax, haemopericardium or lung collapse due to direct compression.

The incidence of thoracic aortic dilatation is estimated about 5.6 to 10.4 cases per 100,000 patient-years and the prevalence up to 4.2 percent of the population. Nguyen, in 2001, reported that the incidence of rupture is 0.9 to 1.0 per 100,000 and dissection was 3.2 per 100,000 with the risk of aneurysm rupture increase based on size and rapid expansion rate.

Thoracic aortic aneurysm is typically asymptomatic, although it can rarely present with hoarseness as in our case, dysphagia or chest pain. It is believed that the mechanism of left recurrent laryngeal nerve palsy in an enlarging thoracic aneurysm is due to the direct compression of the nerve at the level where it is seen hooked around the ligamentum arteriosum. The left vagus runs anterolateral to the aortic arch, passes below it, posterior to ligamentum arteriosum and ascends towards the trachea-esophageal groove. The left vagus only gives off the left recurrent laryngeal in the thorax, where it is more prone to be affected by the thoracic aneurysm. Few authors concluded that hoarseness might indicate impending aneurysmal rupture ranging from one day to one year after the onset of the recurrent laryngeal nerve palsy. Téixido in 1990 described one case of aneurysm rupture after 1 day of recurrent laryngeal nerve palsy, Chan in 1992 after 1 year and Ohki in 2012 after 1 month of the onset.

Contrasted computed tomography is useful to evaluate the location of the aortic abnormality, extension and size as well as mural composition of the aneurysm, whereas angiography evaluates the contour, lumen and the branch vessels. However, multiplanar display with three-dimensional volume rendering will facilitate better view of the disease. Diameter at least more than 50% from the standardised normal limits in coronal view; 3.6 cm at root, 3.5 cm at ascending aorta, 2.6 cm at proximal descending aorta, 2.5 cm at mid-descending aorta and 2.4 cm at distal descending aorta are considered as aortic aneurysm. This correlates with those case whereby the diameter is more than 50% of the standard value. Mural calcifications are suggestive of atherosclerotic type.

Management of thoracic aortic aneurysm is based on its size, growth rate and symptoms. Some authors suggest elective aneurysm repair when the size is 5.5 cm at ascending aneurysm or 6.5 cm at descending aneurysm, which correlates with our management for this patient. Other indication for surgery is rapid aneurysm expansion with a growth rate of 1 cm per year in symptomatic patients. Open approach
aneurysm repair with a dacron or woven graft is the most common operation for thoracic aortic aneurysm.\textsuperscript{5}

Besides open surgery, thoracic endovascular aneurysm repair (TEVAR) has been shown to reduce at 30-day all-cause mortality and complications compared with open surgery for descending thoracic aortic disease.\textsuperscript{3} According to literature, endovascular stent graft is performed to resolve the hoarseness by reducing the size of aneurysm.\textsuperscript{10} In Malaysia, Cheng (2010) has summarised that current practice of endovascular aneurysm surgery is still limited. Due to lack of facilities and high cost.\textsuperscript{11}

In view of the fact that the patient refused any surgical intervention, literature has shown that optimisation of the lipid level and certain antihypertensive agents (e.g., long-term beta-blocker treatment) appears to reduce the need for surgery and progression of aortic dilatation in patients with chronic type B aortic dissection.\textsuperscript{5}

Complications of thoracic aortic aneurysm vary with most severe being fatal rupture.\textsuperscript{1} Mortality associated with aneurysm-related complication is high and the outcomes depend on centres with expertise in aortic disease.\textsuperscript{3}

\textbf{Conclusion}

High index of suspicion is needed when we come across recurrent laryngeal nerve palsy in a healthy person. Thoracic aortic aneurysm can be the underlying life-threatening aetiology. Even though hoarseness as the cardinal symptom of thoracic aneurysm is rarely seen in the primary care setting, we still need to have a high suspicion in order not to miss it in view of the devastating complications. Early referral to otorhinolaryngology and cardiothoracic team is mandatory to ensure the optimal management of the patient.

\textbf{References}

Otitis externa complicated with chloramphenicol ear drops-induced perichondritis

Mohamad I, Johan KB, Hashim HZ, Nik Othman NA


Abstract

Otitis externa is a common condition of the ear. It is manifested as narrowing of the lumen owing to the edematous swelling of the ear canal lining. Perichondritis may occur independently or as a complication of the otitis externa. We report a case of perichondritis after using a topical ear drop. Changing the medication provides immediate resolution of the condition.

Introduction

Otitis externa is inflammation of the external ear. It rarely affects the auricle (ear pinna). The predisposing factors are loss of the canal protective mechanism (by cerumen removal) and excessive moisture from water activities (swimming). The moisture elevates the ear canal pH and the condition (increased pH) promotes bacterial growth. Bacterial infection usually affects the external ear canal as it is lined by skin and subject to infections of the skin such as furunculosis or folliculitis, eczema or allergic conditions as well as fungal infections (otomycosis). The treatment includes aural toilet and the condition (increased pH) promotes bacterial growth. Bacterial infection usually affects the external ear canal as it is lined by skin and subject to infections of the skin such as furunculosis or folliculitis, eczema or allergic conditions as well as fungal infections (otomycosis).

The patient was diagnosed as having right perichondritis complicated by an allergic reaction to the topical ear drops used for otitis externa. Apart from these, erysipelas and cellulitis are the differential diagnoses. The ear drop treatment was immediately stopped and a medicated (ofloxacin-soaked) ear wick was inserted and intravenous ciprofloxacin was started. Oral antihistamine was prescribed to reduce the itchiness. He was also started on oral amoxicillin/clavulanate.

He showed an immediate resolution of symptoms on the first day of admission. The inflammation of the ear canal resolved, and after the removal of the ear wick, it was found that the swelling of the canal had reduced. The skin rashes resolved after 2 days. He was discharged on the fourth day of admission with oral ciprofloxacin. A follow-up visit after a week showed a normal external ear condition. The external ear was dry and the intact tympanic membrane was visible.

Case summary

A 26-year-old male teacher complained of right ear pain for a month. It was associated with on and off ear discharge. There was no associated reduced hearing, tinnitus or vertigo. This was the first episode. He had no other medical problem.

He sought treatment at the local clinic and was treated with topical ear drops. The condition did not resolve, rather it was accompanied by itchiness. He visited another doctor and was given chloramphenicol ear drops. On the following day, the otalgia worsened as evident from the extension of the reddened area from the ear canal to the pinna. The pinna swollen up and watery discharge was noted. Examination showed that the right pinna was swollen covered with discharge from the affected skin area, especially on the gravity-dependent site of the canal (Figure 1). The external ear canal became narrow due to swelling and tympanic membrane was not visible.

Figure 1. Inflammation in the right auricle with evidence of skin excoriation and discharge from the gravity-dependent skin area. The ear canal was packed with the ear wick.
Discussion

Otitis externa is commonly managed in the outpatient management. However, in certain cases where the condition does not settle after a course of antibiotic ear drops, the patient should be admitted to start on intravenous antibiotic treatment.

Perichondritis is a rare complication of otitis externa. It can also occur in isolation. It refers to an infection or inflammation involving the perichondrium of the external ear. It is commonly used to describe a continuum of conditions of the external ear from erysipelas (infection of the overlying skin), cellulitis (infection of the soft tissue), true perichondritis to chondritis (infection involving the cartilage itself). It is more commonly encountered post ear-piercing, especially if the cartilagenous part of the pinna is involved. Once the cartilage is involved, treatment should be started as soon as possible to avoid disfigurement of the pinna.

If the condition presents or progresses as an abscess, surgical drainage is indicated. In this case, the patient was initially treated with topical chloramphenicol ear drops. After one-day instillation into the ear canal, he started to develop inflammation at the area of contact with the drops. This particular case was managed as perichondritis secondary to contact with chloramphenicol ear drops. A true perichondritis—inflammation of the perichondrium only—usually does not affect the ear lobe because it does not contain cartilage. In this case, the lesion involved the ear canal meatus and ear lobe. It was complicated by dermatitis induced by contact with the ear drops used, as evident from the overlying skin involvement in the gravity-dependent area. Commonly, secondary bacterial infection follows. Therefore, treatment with fluoroquinolone should be commenced.

Perichondritis responds well to fluoroquinolone antibiotic treatment. The most commonly used drug is ciprofloxacin. Although studies have shown that both oral and intravenous ciprofloxacin reach therapeutic concentrations rapidly in both serum and urine, the intravenous form may be useful for the initial treatment of severe infections. This is due to its rapid distribution in the blood vessels and high tissue concentration at the site of infections.

Chloramphenicol is known to show delayed-type hypersensitivity following topical application. However, it is associated with low sensitising potential according to animal studies, and only susceptible individuals tend to demonstrate the reaction. Allergic reaction to the eye drops containing chloramphenicol is more commonly reported compared to the ear drops. The reaction can be demonstrated both in vivo by epicutaneous testing and in vitro by lymphocyte transformation test. We did not perform these tests in this case as the diagnosis was made by clinical assessment and resolution of signs after withholding the ear drops and administration of anti-histamines.

Conclusion

Every physician must suspect chloramphenicol contact allergy if the primary lesion worsens after its use of medications. Perichondritis secondary to an allergic reaction must be treated with immediate withdrawal of the medication, commencement of fluoroquinolone and anti-histamines.

References

Rhinolith: An important cause of foul-smelling nasal discharge

Yaroko AA, Mohamad I, Hashim HZ


Abstract

Rhinoliths result from neglected nasal foreign bodies that gradually increase in size. They are usually discovered incidentally during routine ENT examination or due to the associated symptoms such as nasal obstruction or persistent foul-smelling unilateral nasal discharge. A case of a 14-year-old girl was reported with a year history of the symptom. The foul-smelling nasal discharge noted by her mother was not the main concern to them. She was referred by her primary care physician as she complained of impacted ear wax. However, rhinolith was incidentally found upon routine clinical examination in the ENT clinic and was removed uneventfully.

Introduction

Nasal foreign bodies left in the nasal cavity for several years lead to the formation of rhinoliths. It is the accumulation of calcium, iron, magnesium and phosphorus around a central core with subsequent increase in size. Rhinoliths may be found incidentally during routine clinical examination usually in the floor of the nasal cavity located halfway between the posterior and anterior nares. Rhinoliths do not show any symptoms at an initial stage but may cause minor symptoms due to their gradual increase in size. However, with significant increase in the size of the rhinolith, nasal discharge and obstruction are observed with the consequent misdiagnosis as rhinitis or sinusitis. In addition to the unilaterality of the symptoms, other presentations of rhinoliths include epistaxis and erosion of the nasal septum and the medial wall of maxillary sinus and perforation of hard palate.

Case summary

A 14-year-old girl was referred to the ENT clinic by her primary care physician as she complained of impacted wax in her right ear. Her chief complaint was reduced hearing and tinnitus. On further questioning of other possible related symptoms, she admitted to a year history of persistent foul-smelling unilateral nasal discharge, which was also noted by her mother. However, there was no history of nasal block, epistaxis or foreign body in the nose. There was no preceding history of trauma and no associated history of allergy.

Examination of the ears revealed wax in the right ear, which was removed by suction under microscopy. On anterior rhinoscopy, whitish mass was apparently seen on the floor of the right nasal cavity. Nasoendoscopic examination revealed a mass occupying the space between the inferior turbinate and septum in the right nasal floor (Figure 1). The mass was dark in colour with mucus overlying it. It was stony hard and gritty in consistency on probing. These findings were consistent with right rhinolith. The left nasal cavity was normal. The rhinolith was completely removed by application of local anaesthesia as outpatient (Figure 2). On crushing the rhinolith, no obvious nidus was identified (Figure 3). The patient was then prescribed a course of oral antihistamine and nasal douching.

Figure 1. Rhinolith (white arrow) and septum (blue arrow) of the right nasal cavity upon endoscopy.
Discussion

Rhinolith was first reported by Bartholin in 1654. Polson reported the largest series ever in history consisting of 495 cases. However, case reports of rhinolith still remain relatively rare in the literature. Although children constitute the majority of patients with different types of nasal foreign bodies, rhinoliths can be seen in patients of all age group especially in young adults. Rhinoliths are believed to be formed by the deposition of magnesium, iron, calcium and phosphorus around a core, which can be intranasal endogenous or exogenous foreign material. The endogenous central core could be due to a blood clot, mucus or bone fragment following trauma. An intact deciduous canine tooth found to be the nidus of a rhinolith was reported in a 47-year-old man who presented with clinical features consistent with rhinolith.

The exogenous central cores, which include foreign bodies placed in the nose usually during childhood, are the most common nidus. These foreign bodies usually include beads, buttons, erasers, seeds of fruits, fragments of wood or bone, sand, pieces of paper, and retained nasal packing. Most commonly, the forgotten foreign body will remain in the nose until patient becomes aware of the foul-smelling unilateral nasal discharge. Irfan et al. (2012) reported a case of a 31-year-old Malay lady who presented with a left nasal blockage for 11 years with findings consistent with rhinolith. It was later identified to be a rubber-tip pencil eraser acting as the core of the rhinolith, isolated from the calcified material upon removal under general anaesthesia. In our current reported case, no nidus was identified after crushing the rhinolith (Figure 3). In this instance, a blood clot, which might have dissolved, could be the nidus.

Rhinoliths are relatively inert and gradually increase in size; thus they do not show any symptoms at an initial stage but cause minor symptoms once they increase in size. With significant increase in size over the years, nasal discharge and obstruction are misdiagnosed as rhinitis or sinusitis. Our index patient presented with foul-smelling nasal discharge that was misdiagnosed over the year as rhinitis. She was later referred to us for a problem of impacted ear wax by her primary care physician. Upon routine ENT examination, the rhinolith was then noted.

Examination of the patient includes anterior rhinoscopy, nasal endoscopy and probing of the mass. In case endoscopy is not available, radiography of the paranasal sinuses may be helpful, although a negative examination will not rule out rhinolith in a symptomatic patient. If diagnosis and extension are not clear, a CT scan can provide accurate details for the location, size and extension of the rhinolith, and any other local diseases that need treatment.

Conclusion

Although relatively rare in teenagers and adults, rhinoliths should always be considered of a differential diagnosis in a patient presenting with foul-smelling unilateral nasal discharge. Proper anterior rhinoscopy with thudicum nasal speculum and good lighting should be carried out to reach the diagnosis. Early referral by the primary care practitioner to obtain an ENT consult should be the rule to avoid misdiagnosis and complications. Small-sized rhinoliths can be removed under local anaesthesia as outpatient, whereas larger ones require general anaesthesia to avoid complications such as perforation of the nasal septum or the hard palate.
References


A 30-year-old Iban woman presented to a rural primary healthcare clinic located along the Batang Rejang in Sarawak. She had a 2-day history of rash, which started over her trunk and later spread to her face and limbs. What started out as individual erythematous maculopapular spots later coalesced to form larger raised blotches. The rash was extremely pruritic and affected her sleep, and hence her visit. The rash was preceded by high grade, persistent fever that was temporarily relieved by paracetamol. She also complained of malaise, arthralgia and myalgia. Her appetite had been poor since the onset of the fever.

She lived in a long house at the edge of the jungle. Although she did not have a history of going into the jungle to forage, she went regularly to the river to wash clothes.

Clinically, she appeared lethargic and had bilateral conjunctival injection. Her left anterior cervical lymph nodes were palpable. There were erythematous macules measuring 5 to 15 mm distributed over her whole body but predominantly over the chest and abdominal region (Figure 1). An unusual skin lesion was discovered at the right hypochondriac region. This lesion resembled a cigarette burn with a necrotic centre (Figure 2).

There was no evidence of hepato-splenomegaly. Examination of the other systems was unremarkable. On further questioning, the patient admitted being bitten by a ‘kutu babi’ or mite 3 days before the onset of her fever.

Case history

Answers

1. An eschar
2. Scrub typhus
3. The organism causing scrub typhus is Orientia tsutsugamushi. It is harboured by trombiculid mites whose main hosts are small rodents.
4. Weil–Felix OX-K agglutination reaction has been widely used as a serodiagnostic test because it is easily available, especially in primary care settings. However, this test lacks specificity and sensitivity. Indirect fluorescent antibody (IFA) and indirect immunoperoxidase (IIP) are better options to detect antibodies against O. tsutsugamushi.
5. Doxycycline 200 mg daily for a week.

Discussion

Scrub typhus is a zoonotic disease caused by O. tsutsugamushi. Its occurrence is highest in the ‘tsutsugamushi triangle’, which is bordered by Japan, Taiwan, China and South Korea in the north, India and Nepal in the west and Australia and Indonesia in the south. In Malaysia, an early study found that scrub typhus resulted in 23% of febrile hospital admissions in a district hospital in Pahang.1
However, the exact prevalence of scrub typhus is still unknown as there is a discrepancy between the low numbers of reported cases and high prevalence of antibodies to *O. tsutsugamushi* in rural populations. Among the indigenous group or ‘Orang Asli’s of West Malaysia, the prevalence of antibodies to *O. tsutsugamushi* ranged between 0% and 36.4%. In Sarawak, 3.8% of the 261 indigenous settlers along the upper reaches of the Rejang River were seropositive when tested for a rickettsial infection. Out of those tested positive, one-third of them were due to scrub typhus, whereas the majority was due to tick typhus. The semi-nomadic Penans had the highest rates of typhus as they were dependent on the jungles and rivers for their daily dietary requirements, and hence greater contact with typhus-bearing vectors.

Scrub typhus occurs as an acute febrile illness with non-specific symptoms and signs. Rash, diffuse lymphadenopathy and myalgia usually accompany the fever. In countries where it is endemic, scrub typhus is the main cause of pyrexia of unknown origin. An eschar forms at the site where the mite bites. Despite being pathognomonic for scrub typhus, eschars are uncommon among South East Asians or those in endemic areas where the illness presents less severely. Even if present, they may be harder to detect in dark-skinned individuals.

Most of the time, diagnosis depends on clinical suspicion. Scrub typhus needs to be differentiated from other causes of acute febrile illness such as malaria, dengue and leptospirosis, which may present similarly. One of the oldest diagnostic tests available is the Weil–Felix OX-K agglutination reaction. Although fast, cheap and easy to perform, this test has specificity and sensitivity flaws. Serologic testing via indirect fluorescent antibody (IFA) or indirect immunoperoxidase (IIP) is the current gold standard. Polymerase chain reaction (PCR) can also detect *O. tsutsugamushi* DNA in samples tested negative using IFA.

Treatment should be initiated upon presumptive diagnosis and should not be delayed while awaiting laboratory confirmation. If left untreated, severe cases can progress to septic shock, multi organ failure and even death. Early antibiotic treatment shortens the course of the illness and reduces mortality. Although the treatment of choice is doxycycline 200 mg OD for a week, other alternatives include tetracycline 500 mg QID, rifampicin 900 mg OD and chloramphenicol 500 mg QID for a similar duration. Recently, it was discovered that a single oral 500 mg dose of azithromycin is equally effective in mild cases of scrub typhus. In more severe cases, intravenous antibiotics may be required.

Travellers to endemic areas can protect themselves by using dimethyl phthalate-impregnated clothing and applying a N-diethyl-meta-toluamide (DEET) - based repellent to exposed skin. Minimising skin exposure by wearing appropriate clothing will also reduce the risk of a mite bite. Although a vaccine is not available, chemoprophylaxis with a weekly dose of doxycycline 200 mg is effective against scrub typhus.

Physicians should have a high index of suspicion for scrub typhus in those presenting with an acute febrile illness especially among individuals from rural areas. A thorough clinical examination is important to avoid missing signs that might otherwise help clinch the diagnosis. Early treatment with antibiotics prevents complications and death.

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### References


A pulsating mass in the pre-auricular region

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Case summary
A 75-year-old lady presented with right pre-auricular swelling, which gradually increased in size during the past 13 years. However, in the last 2 years, she noticed the presence of pulsation. The swelling was painless and there was no history of bleeding or abscess formation. On examination, the swelling was observed in the right pre-auricular region measuring about 5x6x2 cm with well-defined margin (Figure 1). It was a pulsatile swelling with bluish discoloration of skin. There was no tenderness.

Questions
1. What is your diagnosis?
2. What is the investigation of choice?
3. Is any particular investigation that is contraindicated?
4. What are the treatment options?

Answers
1. As the mass is pulsatile, a vascular malformation must be suspected. Besides haemangioma, the differential diagnoses include pseudoaneurysm of the superficial temporal artery and arteriovenous fistula. If the mass is not pulsatile, lipoma or parotid mass should be considered.

2. Investigations should be confined to clinical and imaging studies (CT scan and MRI). In this case, she has undergone a contrast enhanced CT (Figure 2). Angiograms are performed for diagnostic and therapeutic purposes, especially when embolisation is planned. There was a right temporal scalp haemangioma, which has a systemic supply from the superficial temporal artery of right external carotid artery. MRI is the most valuable imaging tool (suspected vascular anomalies) for confirming the diagnosis of and determining the extent of the lesion as well as guiding the treatment plan. MRI is able to assess the extension of the vascular malformation up to the adjacent soft tissue and the morphology and content of the lesion.

Figure 1. A pulsating mass was noted at the pre-auricular region

Figure 2. The mass as depicted on axial cut of the contrast-enhanced CT scan
3. Fine needle aspiration for cytology and open biopsy should not be requested for a suspected vascular lesion. Apart from bleeding during the procedure, the aspirated material from FNAC is of little diagnostic value as it would mostly contain blood cells.

4. Haemangiomata are treated based on individual case either with corticosteroid (intralesional or systemic) or with surgery (open or laser). Propanolol has been shown to have some regressing effect on haemangioma. It seemed to be effective in treating haemangiomata in children with high response rate. However, it is usually not effective in adult patients. It is suggested that propanolol acts by inhibiting angiogenesis via down-regulating the expression of vascular endothelial growth factor in haemangioma-derived stem cells. Haemangiomata with such dimension in the index case usually requires surgical excision or embolisation. If excision is planned and the haemangiomata is huge and has no specific feeder vessel, preoperative embolisation can be performed to reduce bleeding intraoperatively. Current non-invasive treatment may include percutaneous sclerosant therapy by using sclerosant agents such as alcohol or bleomycin. Intralesional bleomycin injection, for example, is shown to be effective in obviating primary surgery or systemic treatment regimens in 80% of haemangiomata and vascular malformation lesions. Sometimes, some haemangiomata may undergo spontaneous regression especially in children.

References


