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Test Your Knowledge

AN ADULT PATIENT WITH CONGENITAL HEART DISEASE

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Choo WS. An adult patient with congenital heart disease. Malaysian Family Physician. 2010;5(3):153-154

CASE HISTORY

This is the chest x-ray of an adult patient who is under follow-up for congenital heart problem. She has previous history of Blalock-Taussig shunt inserted for univentricular heart with rudimentary right ventricle as well as tricuspid and pulmonary atresia.

QUESTION:

1. What are the three abnormalities in this chest x-ray (Figure 1)?
2. What is the clinical diagnosis?
3. What are the conditions that can be associated with this diagnosis?
4. What is the electrocardiogram (ECG) findings in this patient (Figure 2)?

ANSWER:

1. (a) Dextrocardia ("Left" x-ray marker was at the correct position)
   (b) Gastric shadow on the right side
   (c) Scoliosis

2. Detrocardia with situs inversus, as both the aortic arch and gastric shadow are located on the right side.

3. Several congenital problems can be associated with detrocardia. These are Kartagener's syndrome, double outlet right ventricle, endocardial cushion defects, pulmonary stenosis or atresia, transposition of the great arteries and ventricular septal defect.

4. A 12-leads left-sided electrocardiography will typically shows an inversion of the electrical waves in leads I, II, aVR and reverse R-wave progression across the precordial leads i.e. with the tallest R wave in V1 progressively decreasing in amplitude in leads V2 to V6.

DISCUSSION

The normal arrangement of major visceral organs in the body is referred to as situs solitus. Dextrocardia is a congenital defect in which the heart is situated on the right side of the chest. Situs inversus occurs when the visceral organs are placed mirror-imaged to their normal position. If the heart is also swapped to the right side of the thorax, it is known as situs inversus with dextrocardia or situs inversus totalis.[1] This condition is usually associated with 3-5% incidence of congenital heart disease especially with transposition of great arteries. Situs inversus with levocardia (the heart remains in the normal left side of the thorax) is rare[2] and it is almost always associated with congenital heart disease. Kartagener's syndrome is characterized by sinus inversus, chronic paranasal sinusitis and bronchiectasis.[3] Diagnosis can be made by chest x-ray and ECG, although CT scan or MRI maybe needed for more complex forms of congenital disease related to dextrocardia.

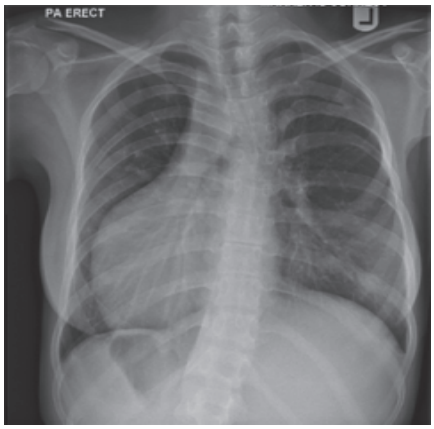

Figure 1

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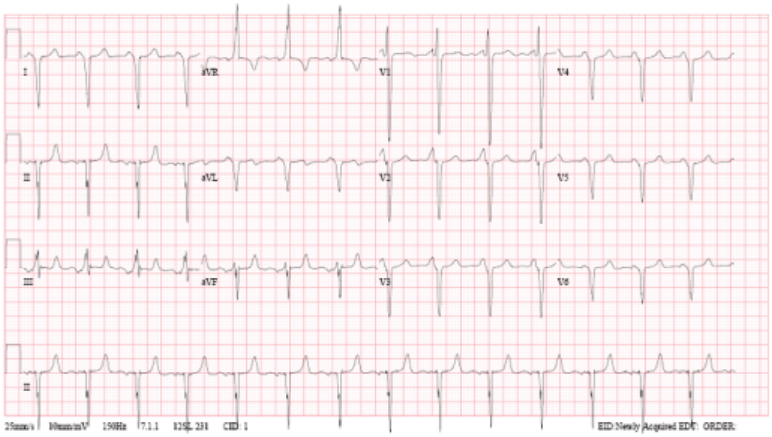

Figure 2

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About 15% of adults in Malaysia have diabetes

Rampal S, Rampal L, Rahmat R, *et al.* Variation in the prevalence, awareness, and control of diabetes in a multiethnic population: a nationwide population study in Malaysia. *Asia Pac J Public Health.* 2010;22(2):194-202.

In a population-based cross-sectional study of 7683 respondents aged e"30 years, the prevalence of diabetes mellitus was 15.2% (95% CI = 14.1, 16.4). Multivariate analysis showed that compared with Malays, Chinese had lower odds and Indians had higher odds of having diabetes. The odds of diabetes increased with age, family history of diabetes, body mass index, and lower education levels.

Incretins are effective for in glycaemic control and some of them have additional advantage such as weight loss

Fakhoury WKH, LeReun C, Wright D. A meta-analysis of placebo-controlled clinical trials assessing the efficacy and safety of incretin-based medications in patients with type 2 diabetes. *Pharmacology.* 2010;86(1):44-57.

This is a systematic review of 38 placebo-controlled trials comparing various incretins and placebo. Incretin-based therapies are effective in glycemic control and also offer other advantages such as weight loss (exenatide and liraglutide).