

A heart on the right can be more complex than it first appears

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DESCRIPTION

At first glance these chest radiographs appear similar. Closer inspection suggests 'dextrocardia' (figure 1A) and 'dextroposition' (figure 1B).

Confusing terminology is helped if the heart's position within the thorax and point of direction of the apex is described.¹ A heart and apex on the left is termed 'levocardia', a central heart with midline apex as 'mesocardia' and a right-sided heart and apex as 'dextrocardia'.

Dextroposition describes a heart on the right with an apex to the left, secondary to extracardiac causes (right lung hypoplasia, pneumonectomy or diaphragmatic hernia). In contrast, dextrocardia results from cardiac chamber disarrangement.²

'Dextrocardia' (prevalence around 1/12 000)² comprises three types, depending on the 'situs' (left or right orientation) of the atria and viscera.

Normal orientation of the atria and viscera is termed 'situs solitus' (ie, left atrium, spleen and two-lobed lung on left).

In 'situs inversus' the normal left and right orientation is reversed as a mirror image. When other viscera are involved, as in our patient (figure 1A), it is termed 'situs inversus totalis' (ie, spleen and stomach on the right and three-lobed lung on the left).

In 'situs ambiguous' (prevalence around 1/20 000)² the heart adopts left or right sidedness (isomerism). In left isomerism, both atria are morphologically left with multiple spleens, midline liver and both lungs are two-lobed. In right isomerism both atria are morphologically right with a midline liver, bilateral three-lobed lungs and no spleen.^{1 3}

Associated cardiac malformations with dextrocardia include atrioventricular septal defect, univentricular

heart, transposition of the great arteries, atrial septal defect and anomalous pulmonary venous return.³

Learning points

- ▶ The heart in a 'dextrocardia' position results from cardiac chamber disarrangement and can be associated with other cardiac malformations and malposition of viscera.
- ▶ Situs ambiguous has a 100% association with cardiac malformation and situs solitus is more likely to have associated cardiac malformations than situs inversus.
- ▶ Around 20% of subjects with 'situs inversus totalis' will have an abnormality of their cilia, which may result in bronchiectasis and male infertility (Kartagener's syndrome).

Competing interests None.

Patient consent Obtained.

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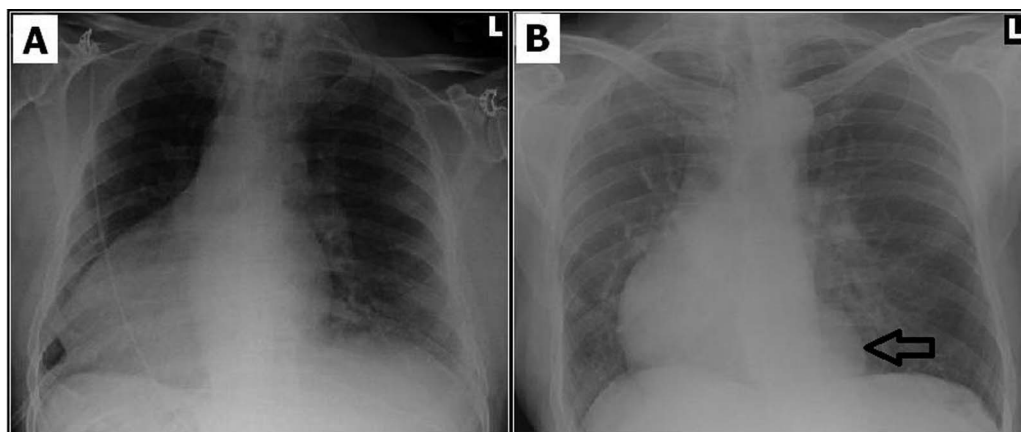


Figure 1 Chest radiographs from two men in their 70s incidentally found to have dextrocardia with situs inversus (A) and dextroposition with a hiatus hernia (arrow) (B).

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