

## The hilum overlay sign in a child

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### Case history

A 9-month-old girl presented with a 1-month history of coughing. A chest X-ray (CXR) was performed, and the antero-posterior view demonstrated the hilum overlay sign. Furthermore, there was absence of the azygo-oesophageal line and bilateral paraspinal lines. The lateral CXR revealed a posterior mediastinal mass. Subsequently, a computed tomogram of the chest confirmed a posterior mediastinal mass, with calcifications and intraspinal extension consistent with neuroblastoma. Histological analysis confirmed this mass as a neuroblastoma.

### The sign

Felson described the hilum overlay sign as the visualisation, on a frontal X-ray, of the first bifurcation of either the left or right pulmonary artery more than 1 cm medial to the lateral edge of the cardiac shadow. This is highly suggestive of a mediastinal mass.<sup>1,2</sup>

The hilum overlay sign is present on a frontal chest radiograph when normal hilar structures can be visualised through a mass, which implies that the mass is either anterior or posterior to the hilum.<sup>3</sup> The presence or disruption of mediastinal lines may further aid in the localisation of

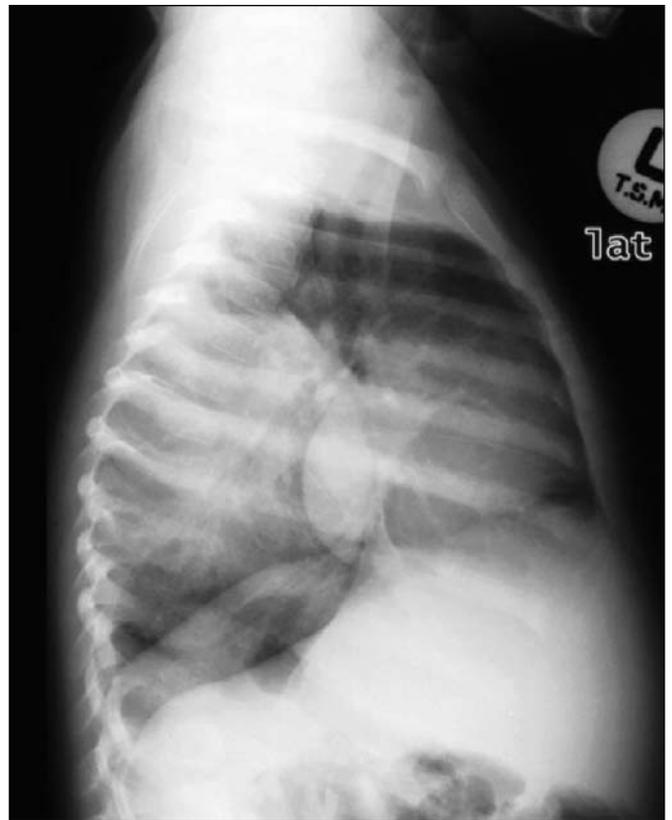


Fig. 2. Lateral CXR confirms a posterior mediastinal mass.

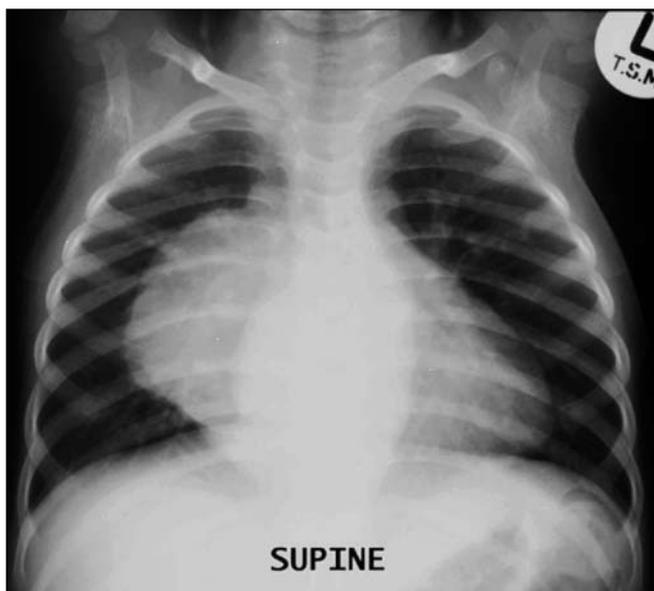


Fig. 1. AP CXR demonstrates the hilar overlay sign, with normal hilar structures visualised through the mass, and the absence of the azygo-oesophageal and bilateral paraspinal lines.



Fig. 3. Post-contrast axial chest CT at the level of the mediastinum demonstrates a poorly enhancing, predominantly right sided, posterior mediastinal mass with calcification and right neural foramen extension.

the mass. The absence of the paraspinous and azygo-oesophageal lines suggests that a mass is located in the posterior mediastinum. The sign also enables us to distinguish a mediastinal mass from a prominent cardiac silhouette.<sup>4</sup>

A typical posterior mediastinal mass displaying the hilum overlay sign is neurogenic in origin in the majority (88%) of cases.<sup>5</sup> When there is calcification or adjacent bony erosion on a radiograph, it is highly suggestive of neuroblastoma.<sup>5,6</sup> It may displace and invade adjacent structures and may even cross the midline.<sup>6</sup> Most (70 - 90%) neuroblastomas usually occur in the first 5 years of life.<sup>5,6</sup>

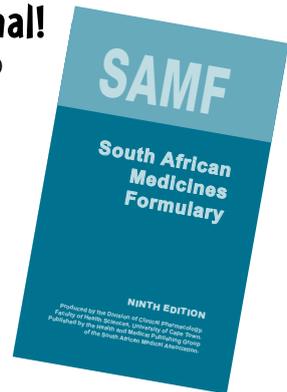
1. Felson B. The mediastinum. *Semin Roentgenol* 1969;4:41-58.
2. Felson B. More chest roentgen signs and how to teach them. Annual oration in memory of L Henry Garland, M.D., 1903-1966. *Radiology* 1968;90:429-441.
3. Whitten CR, Khan S, Munneke GJ, Grubnic S. A diagnostic approach to mediastinal abnormalities. *RadioGraphics* 2007;27:657-671.
4. Lesslie M, Chasen MH, Munden RF. Imaging of the mediastinum in oncology. *Applied Radiology* 2007;36(1): 8-19.
5. Merten DF. Diagnostic imaging of mediastinal masses in children. *AJR* 1992;158:825-832.
6. Strollo DC, Rosado-de-Christenson ML, Jett JR. Primary mediastinal tumors part II: Tumors of the middle and posterior mediastinum. *Chest* 1997;112:1344-1357.

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