

# Unforeseen rib fracture findings in infant chest radiographs: evidence of non-accidental injury or simply a case of birth trauma?

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## DESCRIPTION

After a pregnancy complicated by gestational diabetes, a baby boy weighing 4.04 kg was born to a G1P0 mother. He was in cephalic occipitoanterior presentation; therefore a decision was made to deliver him by forceps. However, the delivery was further complicated by shoulder dystocia. On physical examination after birth, the attending doctor noted bruising to the child's face and ears, and reduced power in the right arm. A chest radiograph taken shortly after review demonstrated posterior rib fractures of the left fifth to seventh ribs (figure 1).

Owing to the instrumental delivery and birth trauma, a skeletal survey was not performed. Based on the known clinical history, the examination findings were attributed to injury sustained during delivery. Although rare, there have been multiple case reports of rib fractures in neonates occurring secondary to birth trauma.<sup>1</sup> Fractures in a neonate presenting in a similar fashion to those in our case report are very unusual as they are usually deemed secondary to anteroposterior compression or direct

trauma to the chest wall—mechanisms that are usually associated with non-accidental injury (NAI).<sup>2</sup> Specifically, posterior rib fractures are considered highly suspicious for NAI.<sup>3</sup>

Case reports such as ours highlight the need for succinct clinical history and examination to correlate with the relevant radiological findings. We also recommend undertaking relevant laboratory investigations to exclude metabolic diseases. In our case, blood tests revealed normal albumin, calcium, phosphate and alkaline phosphatase levels. The baby was therefore discharged with follow-up physiotherapy and an outpatient chest radiograph.

## Learning points

- ▶ Rib fractures in a neonate or adolescent are highly suspicious for child abuse.
- ▶ Although rare, case reports have demonstrated that these findings have also been correlated with birth trauma.
- ▶ To aid with the correct diagnosis, imaging findings should be combined with clinical history, examination and laboratory findings.

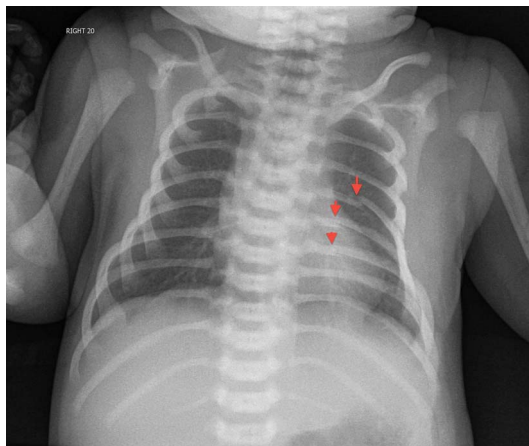
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**Patient consent** Obtained.

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**Figure 1** Chest radiograph demonstrating posterior fractures of the left fifth to seventh ribs.



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