

A Rare Case of Neonatal Air-Leak Syndrome

Um Caso Raro de Síndrome de *Air-Leak* Neonatal

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A full-term neonate, weighing 3830 g, was born through a vacuum-assisted vaginal delivery, complicated with shoulder dystocia. The neonate had Apgar scores of five and eight at one and five minutes, respectively, and received positive pressure ventilation using a T piece device.

At eight hours of life, the neonate presented respiratory distress and persistent groaning. Physical examination revealed an acute swelling of the neck and scalp, with palpable crepitus, and reduced air entry on the left hemichest. Chest radiograph showed an extensive air leak with thorax and neck subcutaneous emphysema, pneumomediastinum and left non-hypertensive pneumothorax, which was drained. The subcutaneous emphysema extended to the entire scalp and was apparent in the skull radiograph as a radiolucent band between the skull and scalp, reflecting the presence of a massive amount of air in the subgaleal space – “angel’s halo sign” (Figs 1 and 2).¹ The computed tomography (CT) scan excluded subgaleal haemorrhage as well as skull or clavicle fracture (Fig. 3). The neonate maintained hemodynamic and haemoglobin stability. He was managed conservatively with oxygen and showed gradual regression of the swelling (7 cm decrease in cephalic perimeter throughout the hospitalization). He was discharged at eight days of life and had no other complications on the follow-up.



Figure 1. Anteroposterior skull radiograph showing a radiolucent band in between the skull and scalp – “angel’s halo sign”.

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Figure 2. Skull radiograph in lateral incidence evidencing an extensive subgaleal emphysema.



Figure 3. CT scan with cervical and scalp subcutaneous emphysema (without evidence of subgaleal haemorrhage) with extension to the mediastinum and parapharyngeal areas; no skull or clavicle fracture was apparent in the exam.

Subgaleal emphysema is an extremely rare and benign type of air leak syndrome in neonates, usually secondary to difficult and/or instrumentalized delivery.¹⁻⁴ It commonly occurs in association with pneumomediastinum, from which air can dissect superiorly along the carotid sheath separating the scalp from the galea aponeurotica.^{1,2} It is of utmost importance to exclude subgaleal hematoma, given the possibility of fast and fatidic progression to haemorrhagic shock.⁵ Our goal with this report was to call attention to this diagnosis and the importance of a timed approach.

Awards and Previous Presentations

The clinical case referred in this article was presented as a scientific poster with the title “Hematoma subgaleal vs Síndrome de Air-Leak em contexto de parto traumático” in the “48º Congresso Português de Neonatologia”, occurring in Lisbon, Portugal, on the 4th to 6th of December 2019.

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