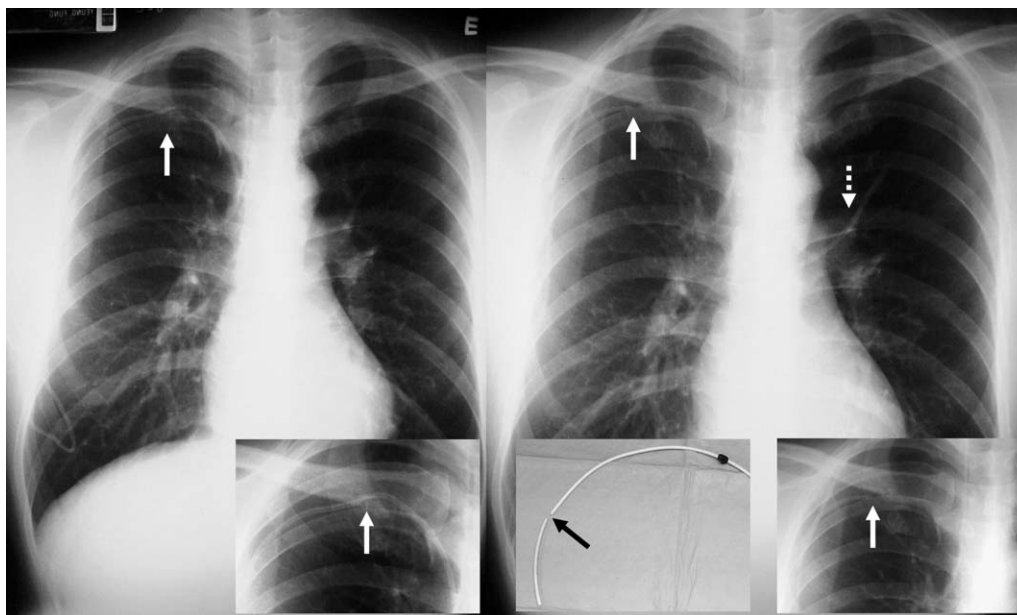


# Spontaneous Central Venous Catheter Fracture: Relevance of the Pinch-off Sign

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**FIGURE 1.** Right panel showing catheter fracture (arrow, enlarged in insert), and the distal fragment (broken arrow). Left panel, showing pinch-off sign (arrow, enlarged in insert).

A long-term tunneled subclavian venous catheter of a 32-year-old leukaemia patient blocked. Chest x-ray (CXR) showed a fracture, with the proximal end underneath the first rib and clavicle (Figure 1, arrow, right panel), and distal fragment at the left hila (broken arrow). A CXR 3 months ago showed catheter kinking and narrowing at the same site, constituting the “pinch-off sign” (arrow, left panel).<sup>1</sup> The broken fragment was retrieved from the left pulmonary artery by cardiac catheterization. Fractured ends were smooth (central insert).

Spontaneous central venous catheter fracture occurs in 0.1% to 1% of cases.<sup>2</sup> The catheter fracture is postulated to be related to compression between the clavicle and first rib due to vigorous movement or heavy object lifting,<sup>3</sup> activities that should be avoided. Fractures at other sites are exceptional. The “pinch-off sign” may precede fracture; if detected, catheter removal is warranted,<sup>4</sup>

a fact both clinicians and radiologists should be aware of.

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#### References

1. Aitken DR, Minton JP. The “pinch-off sign”: a warning of impending problems with permanent subclavian catheters. *Am J Surg.* 1984;148:633–636.
2. Koller M, Papa MZ, Zweig A, Ben-Ari G. Spontaneous leak and transection of permanent subclavian catheters. *J Surg Oncol.* 1998;68:166–168.
3. Mirza B, Vanek VW, Kupensky DT. Pinch-off syndrome: case report and collective review of the literature. *Am Surg.* 2004;70:635–644.
4. Takasugi JK, O’Connell TX. Prevention of complications in permanent central venous catheters. *Surg Gynecol Obstet.* 1988;167:6–11.