

Image in Medicine

HUGE HAEMATOMA CAUSING CHEST WALL COMPRESSION FROM RUPTURE OF ARTERIOVENOUS FISTULA

Chao CT, Yang SY

Division of Nephrology, Department of Internal Medicine, National Taiwan University Hospital, College of Medicine, Taipei, Taiwan

Correspondence and offprint requests to: Chia-Ter Chao, E-mail: b88401084@ntu.edu.tw

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A 71-year-old man was transferred from a local hospital to our emergency department due to rapid swelling of his left forearm, arm, and chest wall down to the left upper quadrant of his abdomen. He had a history of diabetes mellitus and hypertension and started peritoneal dialysis for end-stage renal disease 1 year before. A left arm brachio-basilic arteriovenous fistula (AVF) was constructed due to poor peritoneal dialysis ultrafiltration efficacy 10 months later, and he just underwent cannulation before transfer. At arrival, hypotension (78/46) and tachycardia (120) were found. Physical examination showed extreme bulging of the left chest wall and asymmetric arm size. Laboratory study showed a drop in haemoglobin from his baseline level 9.0 g/dL to 6.4 g/dL. Aggressive component therapy and tourniquet compression over the puncture site were immediately applied. An extremity and chest CT showed a huge haematoma extending from the left arm to the axilla and left chest wall, resulting from the left arm AVF rupture (Fig. 1). The haematoma gradually stabilized in size after tourniquet compression, with careful distal limb pulsation monitoring. His hypotension also improved, and the swelling resolved one week later without invasive intervention.

AVF rupture is a rare complication during routine cannulation of haemodialysis access, and incidence of rupture requiring surgical intervention is estimated at 1.1% (1). Causes of rupture usually involve endovascular manipulation (2), inappropriate insertion technique, and an underlying access infection or pseudo-aneurysm should always be considered, especially preceded by the "herald bleeding". In our patient, such anatomic defect was not identified, but it is very rare that this haematoma expanded so broadly as to compromise his haemodynamic status. Peri-procedural AVF rupture is usually managed with immediate balloon tamponade or stent grafting, and conservative management has not been reported before. However, in this patient, such management turned out to be useful when instituted early in the course. If cautiously applied, a tourniquet compression for AVF rupture haemostasis could be an effective on-site management if angiographic suite or surgical service is not immediately available.

REFERENCES

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Figure 1: An axial view of chest CT indicated a profuse haematoma dissecting the pectoralis and the arm musculature (upper inset); a coronary view demonstrated the extent of the haematoma, with arm swelling and compression of the chest wall (lower inset)