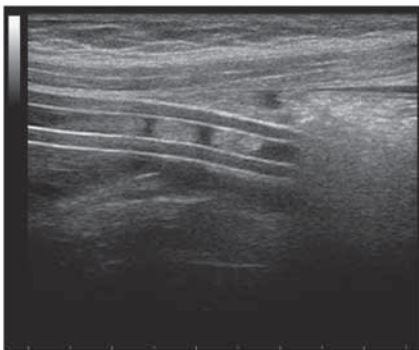


# Ultrasound in the diagnosis of peritoneal catheter obstruction in children

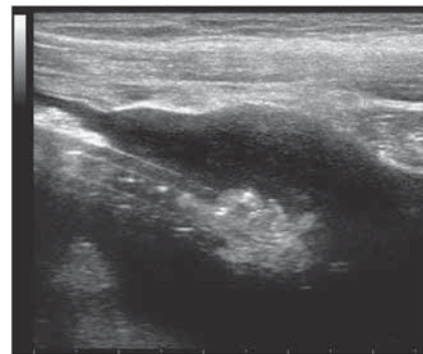
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**Figure 1** | The 'sandwich structure' of Tenckoff catheter with endoluminal scattered internal echoes corresponding to strands of fibrin.



**Figure 2** | Omental wrapping: amorphous material as homogeneous echogenic area around the distal tip. This material appeared strongly stuck to the catheter, with a tendency to creep into the lumen of the catheter for about 2 cm.

Catheter obstruction is a known complication related to chronic peritoneal dialysis (CPD) in children. Ultrasound scanning identifies clearly the lumen of the Tenckoff catheter and all its tracts, including external, subcutaneous, and intra-abdominal segments, as well as the holes of the intra-abdominal portion. Ultrasound examination was performed using the MyLab 25 scanner (Esaote Group, Genoa, Italy) with micro-convex (5–8 MHz) and/or linear probes (5–12 MHz). The patient is placed in supine position, and longitudinal and transverse scans along the catheter tract are displayed. On ultrasound, the silicon tube of the catheter throughout its length appears as a 'sandwich structure' consisting of a double-layered hyperechoic band

representing the anterior and posterior sides of the catheter. Both the external and internal cuffs are hyperechoic and have a characteristic acoustic shadow (Figure 1). Ultrasound can provide accurate diagnostic information of peritoneal catheter obstruction showing the presence of endoluminal strands of fibrin and/or other materials (Figure 1) and omental wrapping (Figure 2). The repeatability and noninvasiveness of ultrasound scanning and the absence of exposure to ionizing radiations are useful features in the management of children on peritoneal dialysis, allowing the physician to rapidly carry out therapeutic interventions for obstructed peritoneal dialysis catheters.