COLOUR DOPPLER ULTRASOUND FOR PERITONEAL CATHETER MALFUNCTION

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Introduction and Aims:

Ultrasound for catheter tunnel related complications is an acknowledged and standardized procedure. The ultrasound examination of intraperitoneal causes of catheter malfunction has been reported only for paediatric patients. The aim of the study was to evaluate the feasibility of colour Doppler for testing of malfunctioning peritoneal catheters in adults.

Methods:

The ultrasound examination is performed in a supine position of the patient with partially filled peritoneal cavity. The peritoneal catheter remains connected to the dialysate double bag set. An ultrasound probe of at least 5 MHz is used to follow the intraperitoneal tract of the catheter. The catheter is flushed by means of gravity with dialysis fluid, and accompanied by colour doppler scans parallel to the catheter. Presence of colour flow jets is confirming patency of catheter sideholes.

Results:

Five malfunctioning peritoneal catheter were evaluated by colour Doppler ultrasound. The catheters presented prevalently problems of dialysate outflow. Ultrasound reveiled permanent adhesion of ecogenic structures at the distal part of the catheter, whereas Doppler ultrasound absence of flow signals at the distal part of the catheter. Videolaparoscopy confirmed the ecographic suspect of occlusion of catheter sideholes by omental wrapping.

Conclusions:

Ultrasound of the peritoneal catheter is a non invasive ambulatory bedside procedure making possible the examination of the intraperitoneal segment. Colour doppler is adding important information about patency of catheter sideholes. We consider colour doppler ultrasound helpful for functional testing of the peritoneal catheter in patients with dialysate flow problems.

Figure 1: Distal obstruction of the peritoneal catheter, absence of flow signals.

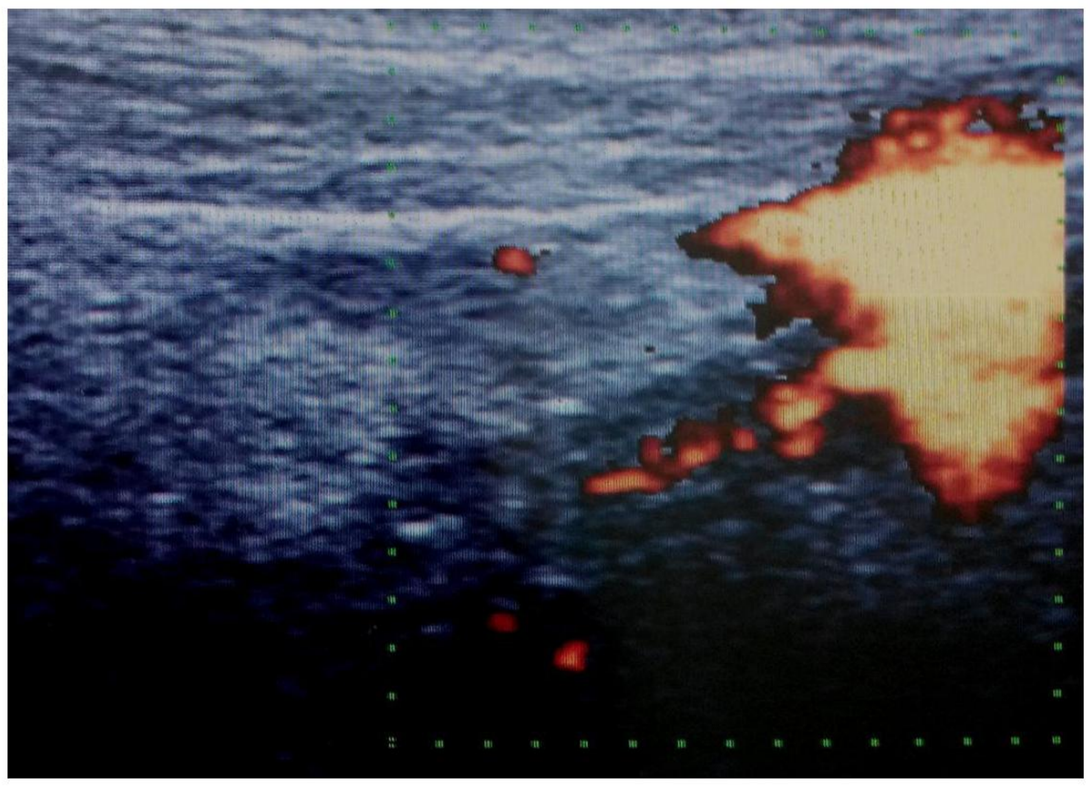


Figure 2: Distal obstruction of the peritoneal catheter by adesion of ecogenic structures and absence of flow signals.

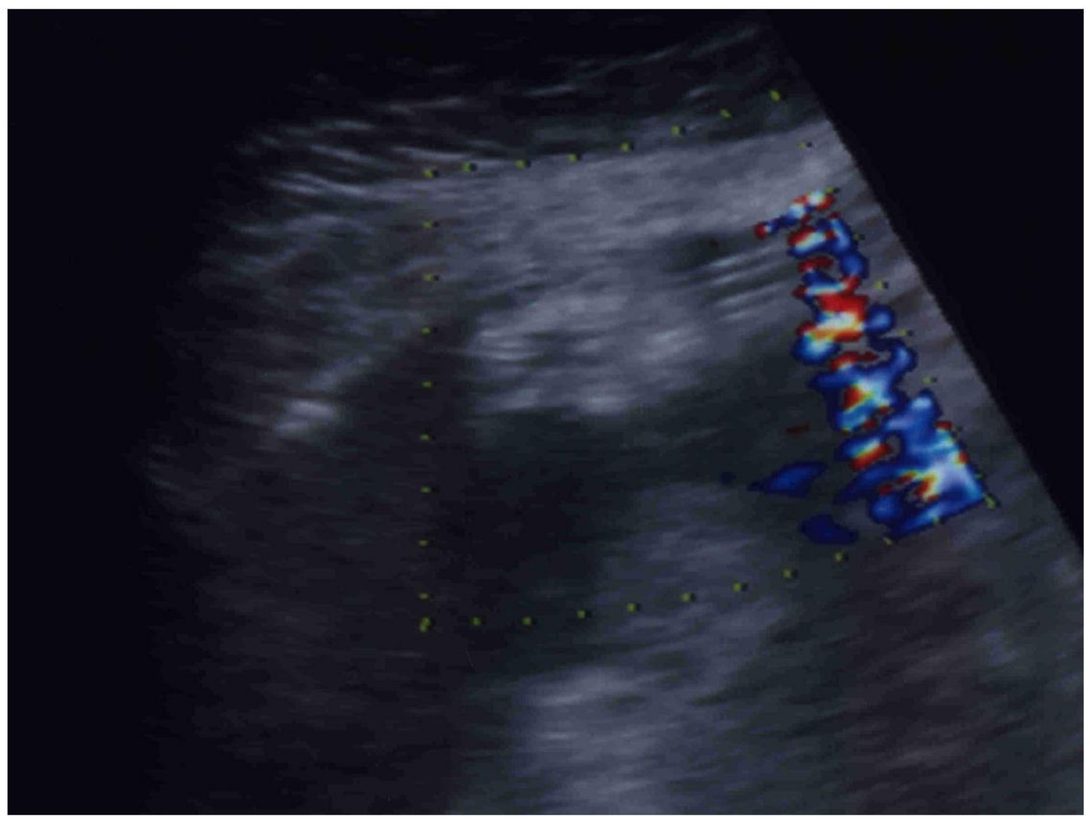
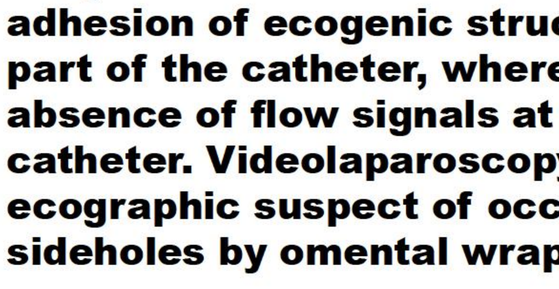
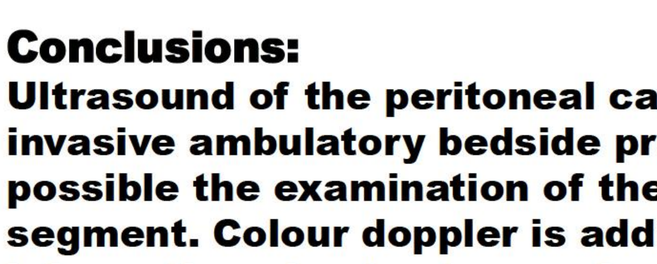


Figure 3: Morphological translation of ultrasound findings.





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