

*Invited Comment***Polypropylene mesh hernia repair—an alternative permitting rapid return to peritoneal dialysis**David M. Lewis¹, Coralie Bingham¹, Martin Beaman¹, Anthony J. Nicholls¹, and Hany N. Riad²¹Renal Unit and ²Department of Surgery, Royal Devon & Exeter Hospital, Exeter, UK**Introduction**

Traditional practice in abdominal wall hernia repair in peritoneal dialysis (PD) patients necessitates discontinuing PD for a period of days to weeks after operation to avoid undue stress to the repair [1]. This is of significant disadvantage to patients, as another form of dialysis must be substituted. The alternative strategy of the patient remaining without dialysis for several days post-operatively is fraught with danger of fluid or biochemical imbalance, particularly following a general anaesthetic. In those patients with severe vascular access problems or haemodynamic instability PD could be the only available modality and great difficulty may be experienced in achieving adequate vascular access even on a temporary basis for haemodialysis. Our observations suggest that low-tension hernia repair with polypropylene mesh reinforcement allows patients to commence or continue PD within 24 h of surgery. This has been advantageous in avoiding the need for a change in dialysis modality, or a protracted period without dialysis: the approach clearly offers advantages both to patients and hard-pressed haemodialysis programmes.

Personal observations*Patients*

Ten patients (age 37–79; 8 male) underwent Marlex[®] monofilament polypropylene mesh low-tension reinforcement repair of 14 abdominal hernias. Six patients had been established on continuous ambulatory peritoneal dialysis (CAPD) for 1–12 months before hernia repair. One had hernia repair while being treated with haemodialysis in preparation for conversion to CAPD. In three patients Tenckhoff CAPD catheters were inserted at the time of hernia repair under the same general anaesthetic to allow immediate commencement of renal replacement therapy.

Surgical procedures

The operations were performed over 17 months by a single surgeon. One patient had two repairs at different sites and times, three had two hernias repaired simultaneously.

Eight patients had inguinal hernia repairs (3 bilateral). In total six indirect inguinal hernias were repaired. This necessitated excision of the hernial sac. For the five direct hernia repairs the sac was inverted. Three patients had para-umbilical and/or incisional abdominal wall hernias. In each case two adjacent hernial sacs were opened and excised during the procedure. In all cases polypropylene mesh was inserted extraperitoneally and fixed with interrupted prolene sutures to achieve a low-tension repair. All patients received a single perioperative intravenous dose of antibiotic (co-amoxiclav 1.2 g).

Results

Post-operative recovery was uneventful for all patients. In the 11 post-operative periods PD was commenced within 24 h on nine occasions: three patients were initially dialysed using an automated cyclor (Proteus, Kimal) using 0.5–1 l exchanges, converting to CAPD, with 1.5–2 l exchanges four times daily, after 7–10 days. Six immediately returned to or commenced CAPD, again with standard volumes. Post-operative dialysate leak did not occur and there were no technical problems with dialysis.

There have been no recurrences of hernia after 9–26 months follow-up. Seven patients remain on CAPD, one has died, one was transplanted, and one changed to haemodialysis. Fifteen episodes of proven bacterial peritonitis and five catheter exit-site infections have occurred, 2 weeks to 20 months post-operatively. These infections were treated by standard antibiotic protocols, with no evidence of mesh infection.

Comment

Abdominal hernias, and theoretically their risk of recurrence, have an increased incidence in PD patients, consequent both on increased intra-abdominal pressure

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from dialysate fluid, and muscle wasting secondary to uraemia [2]. Patient discomfort, adequacy of dialysis, as well as conventional hernia complications ensure surgical repair is a necessity. Patients with end-stage renal failure due to commence CAPD who are discovered to have an abdominal wall hernia will be delayed in commencing dialysis if a traditional approach to repair is followed. Mesh hernia repair is becoming more popular under these circumstances [3,4], but there is continued reticence in restarting PD quickly unless in extremis. Resting of the abdominal wall by avoidance of peritoneal dialysis for a number of weeks post-operatively is commonly practised. The change of dialysis modality to haemodialysis, even for a limited postoperative period, has implications both for patient morbidity and logistical and financial considerations.

This small series shows that low-tension mesh hernia repair offers a technically straightforward solution to a common surgical problem in CAPD patients. The technique allows virtually uninterrupted peritoneal dialysis without evidence of hernia recurrence. This has been illustrated in both inguinal and anterior abdominal wall hernias which have required opening of the

peritoneum in order to excise the hernial sac. Failure of mesh hernia repair in general is rare and associated with unusual co-morbidity [5]; no long term problems with the use of mesh repairs in the context of PD have been seen in our centre.

References

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