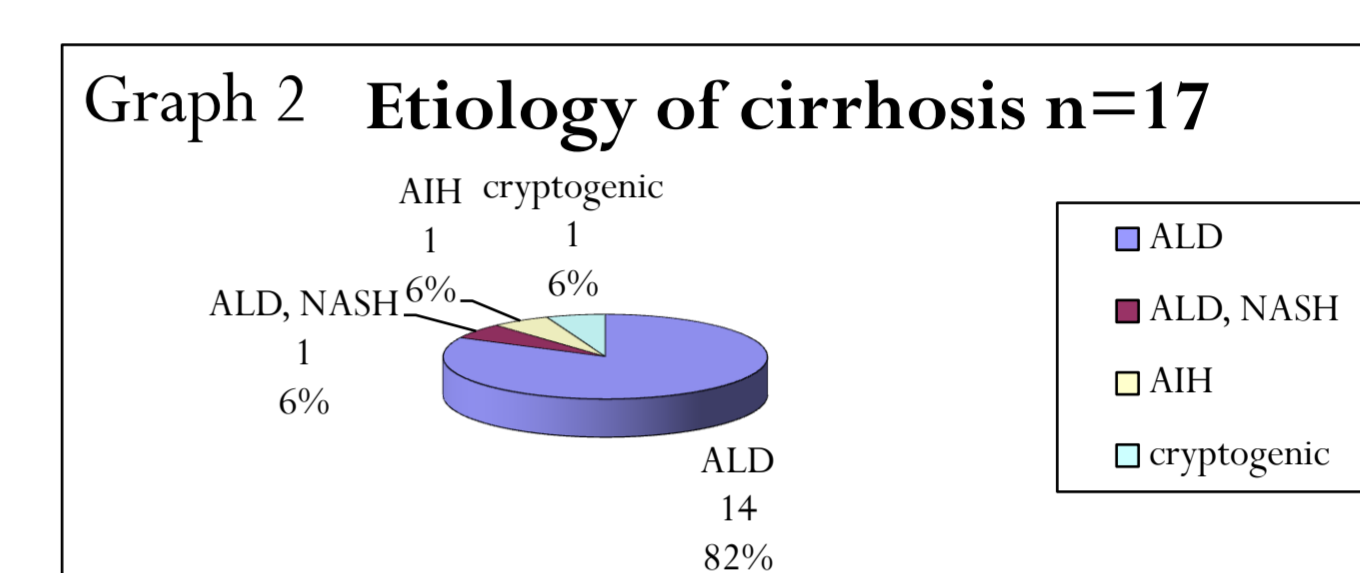
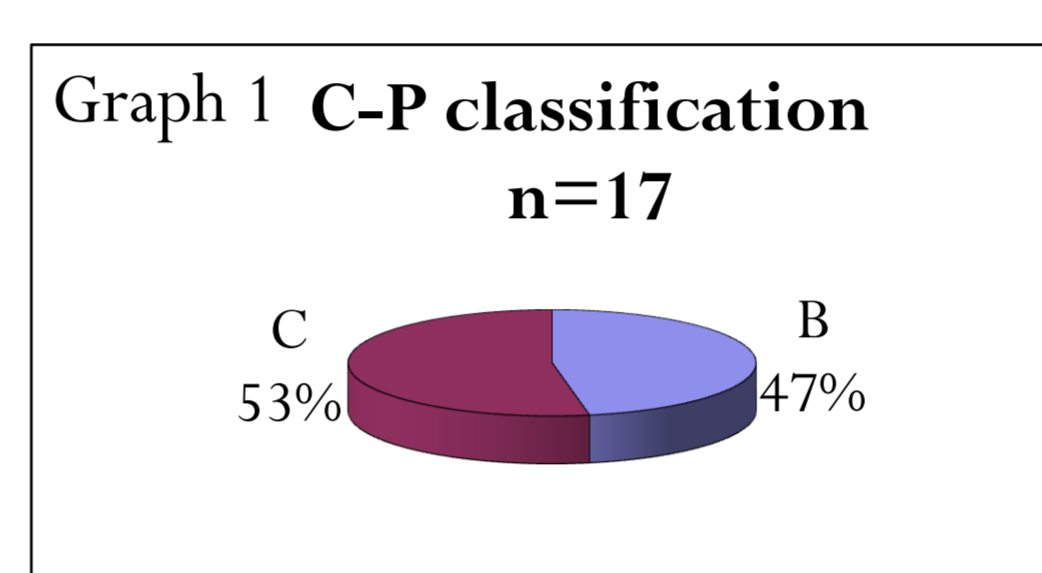


Hernia repair in patient with advanced cirrhosis and refractory ascites using peritoneal dialysis catheter for ascites drainage.

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- Introduction:** Umbilical hernia occurs up to 20% in patient with ascites, with recurrence rate after repair as high as 60%. Complications of these hernias include ascites leakage, ulceration, rupture incarceration and peritonitis, with 60 to 88% mortality if treated conservatively. This is why surgical intervention is indicated. Urgent surgery in cirrhotic patient with refractory ascites is considered as high risk procedure with significant post-operative morbidity and mortality. The indications, surgical techniques and timing of hernia repair remains controversial issue.
- Aim:** To evaluate efficiency of umbilical hernia repair in patients with advanced cirrhosis and refractory ascites using peritoneal dialysis catheter placement to control ascites.
- Methods:** Over the 4 years from 2008 to 2011, 17 patients with advanced cirrhosis and refractory ascites, in whom TIPS was contraindicated, had underwent umbilical hernia repair with simultaneous peritoneal dialysis catheter implantation. Postoperative peritoneal dialysis catheter was used for frequent low-volume paracentesis.
- Operative technique** performed in all patients contained of excision of the skin overlying hernia, if ulcerated, excision of hernial sack and exposing fascia followed by peritoneal dialysis catheter implantation. Mayo plastic of abdominal wall.

- Results:** Over the 4 years period (2008-2011), in 17 patients (12males and 5 females), age 36 to 59 years, hernia repair with paralel peritoneal dialysis catheter implantation was performed. In 13 cases, fascial defect was smaller than 5 cm, in 4 larger then 5 cm. Graph 1 and 2 shows etiology of cirrhosis and Child-Pugh clasification retrospectively. The median follow-up duration was 8 months (1 to 17).



There was no death in 30-days after surgery, 4 deaths occurred during the follow-up period, all of them associated with advanced liver cirrhosis (see Table 1).

Table 1

deaths	total in follow-up duration	Post-operative 30-days period	time after surgery
	4(23,50%)	0(0%)	1-8M
cause of death	2x bleeding oesophageal varices		5W
	1x malignant dysrhythmia		4M
	1x cirrhosis decompensation		8M

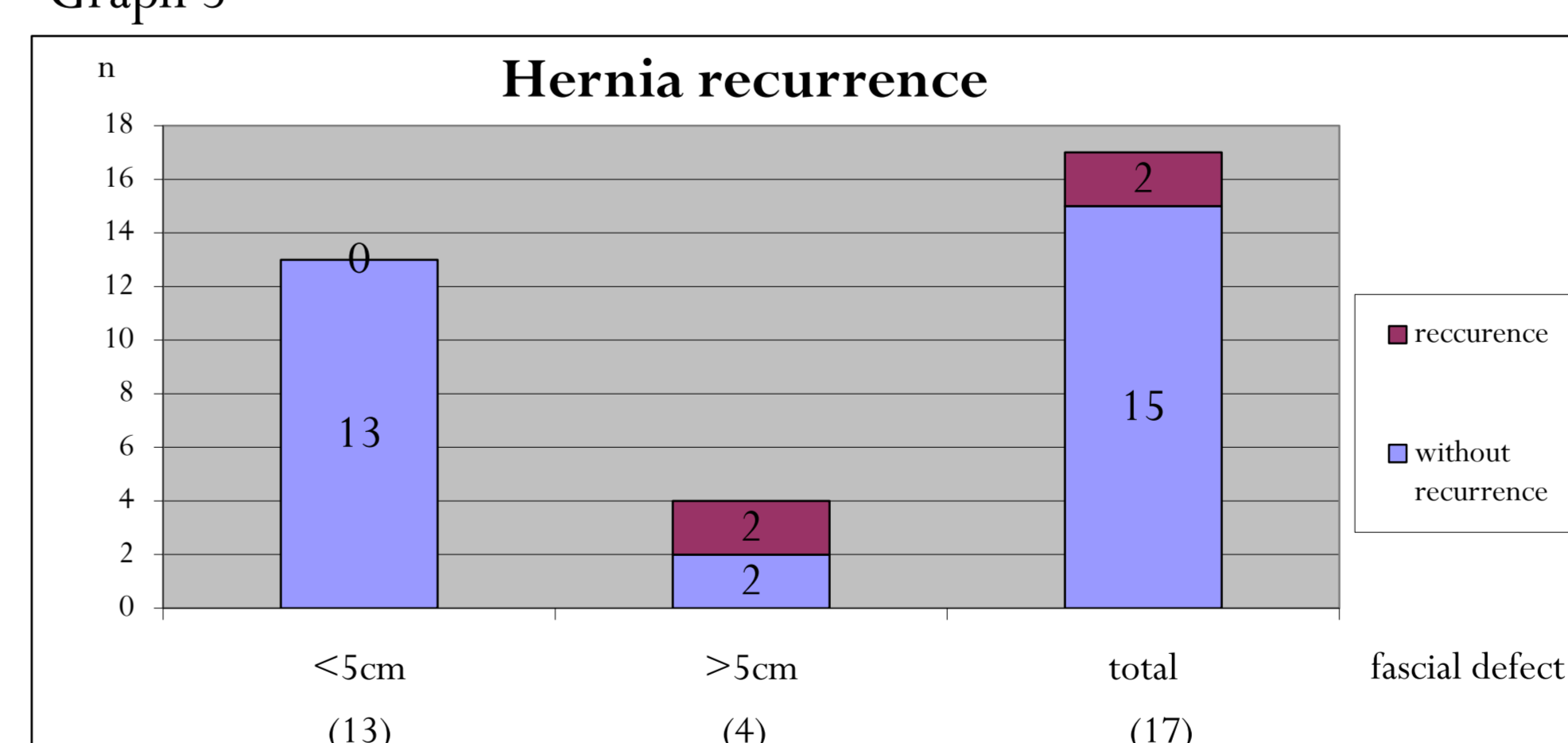
Postoperative morbidity occurred in 9 patients. Minor surgical complications in 5 cases, major surgical complications in 4 cases. Overall, we had 5 post-operative peritonitis, 3 managed conservatively, 2 required urgent catheter extraction. 4 patients developed non surgical complications, such as hepatorenal syndrom and urosepsis (see Table 2).

Table 2

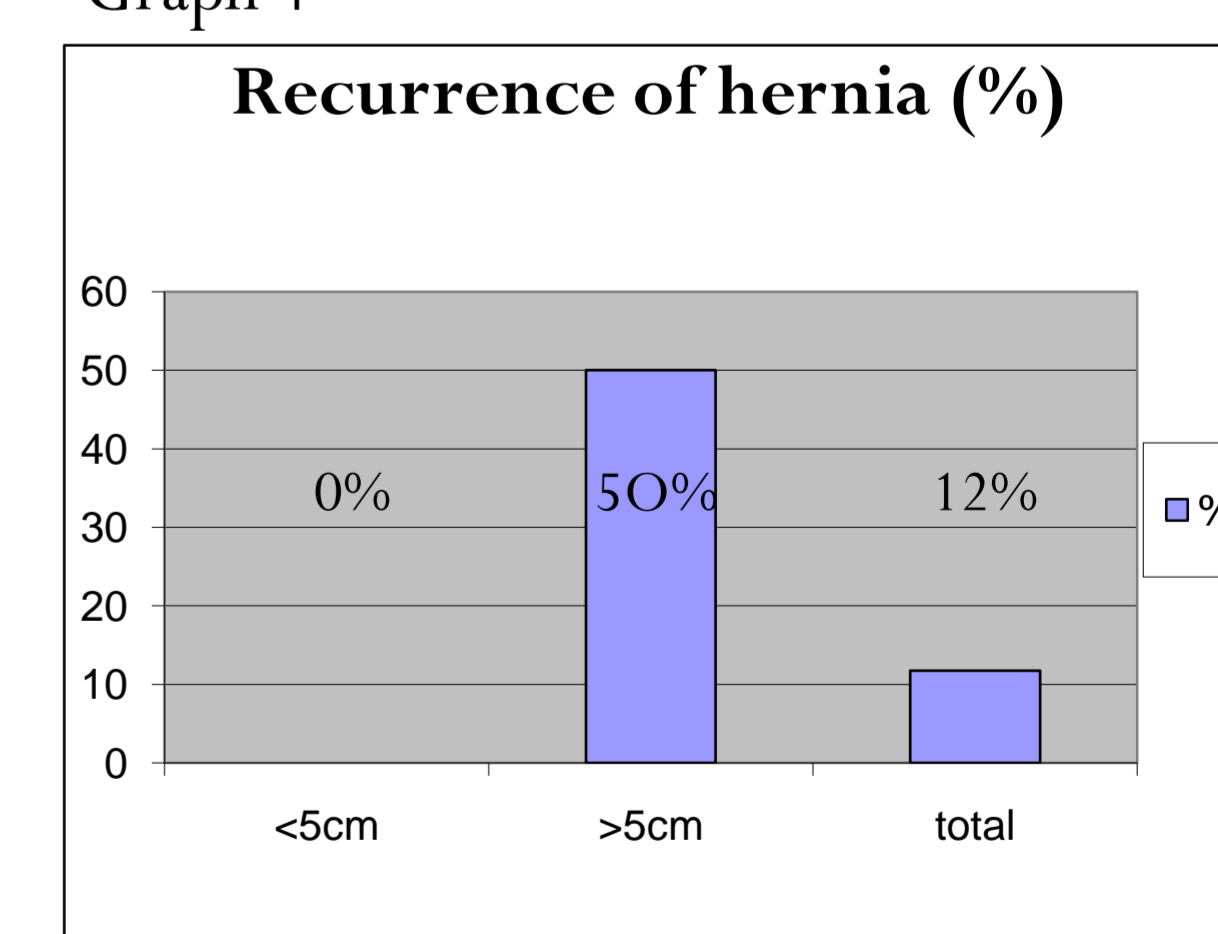
morbidity	surgical complications		non surgical complications	
	minor	major	peritonitis	other
n	5	2	5	4
morbidity %	29.40%	11.74%	29.40%	
cause	2x bleeding (hematoma.) 1x wound hematoma 1x wound seroma 1x abdominal wall phlegmona	2x peritonitis		3x HRS 1x HRS, urosepsis

Reccurence of the abdominal hernia developed in 2 (12%) patients, one year after repair. In both the fascial defect was greater than 5 cm (Graph 3 and 4).

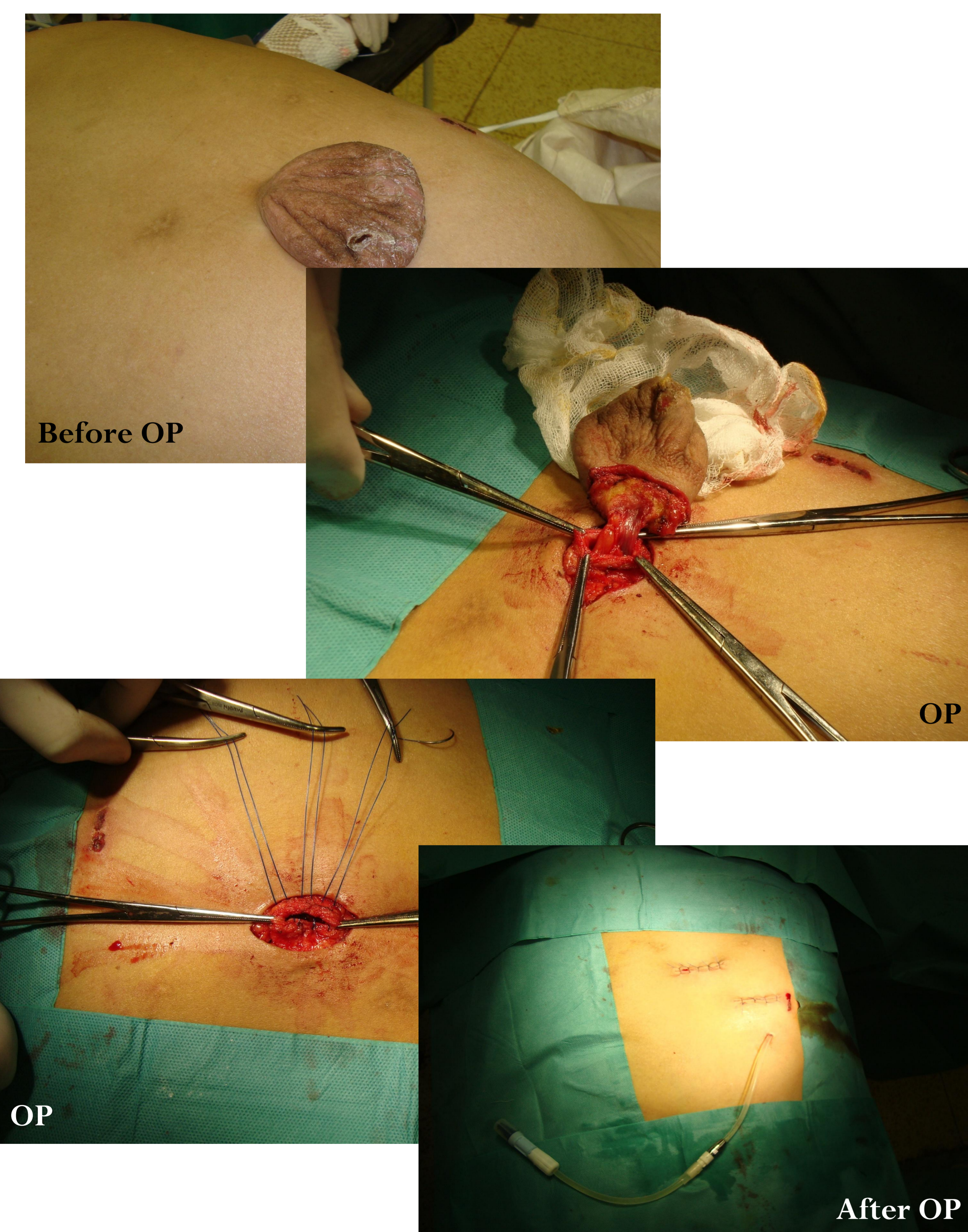
Graph 3



Graph 4



Peritoneal dialysis catheter removal was done in 9 cases. In 2, the catheter was no longer needed on account of disease improvement, in 5 cases because of malfunctioning or non-compliance and in 2 urgent removal had to be permofered because of peritonitis.



- Conclusion:** The indications and type of surgery for umbilical hernia repair in patient with advanced cirrhosis remain controversial. Currently, there are no defined guidelines. Concomitant peritoneal dialysis catheter implantation during hernia repair seems to be effective method for patients with advanced cirrhosis, refractory ascites and hernia, who are contraindicated to pre-operative TIPS placement. To confirm this hypothesis, continuation of our study and prospective part is needed.

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