

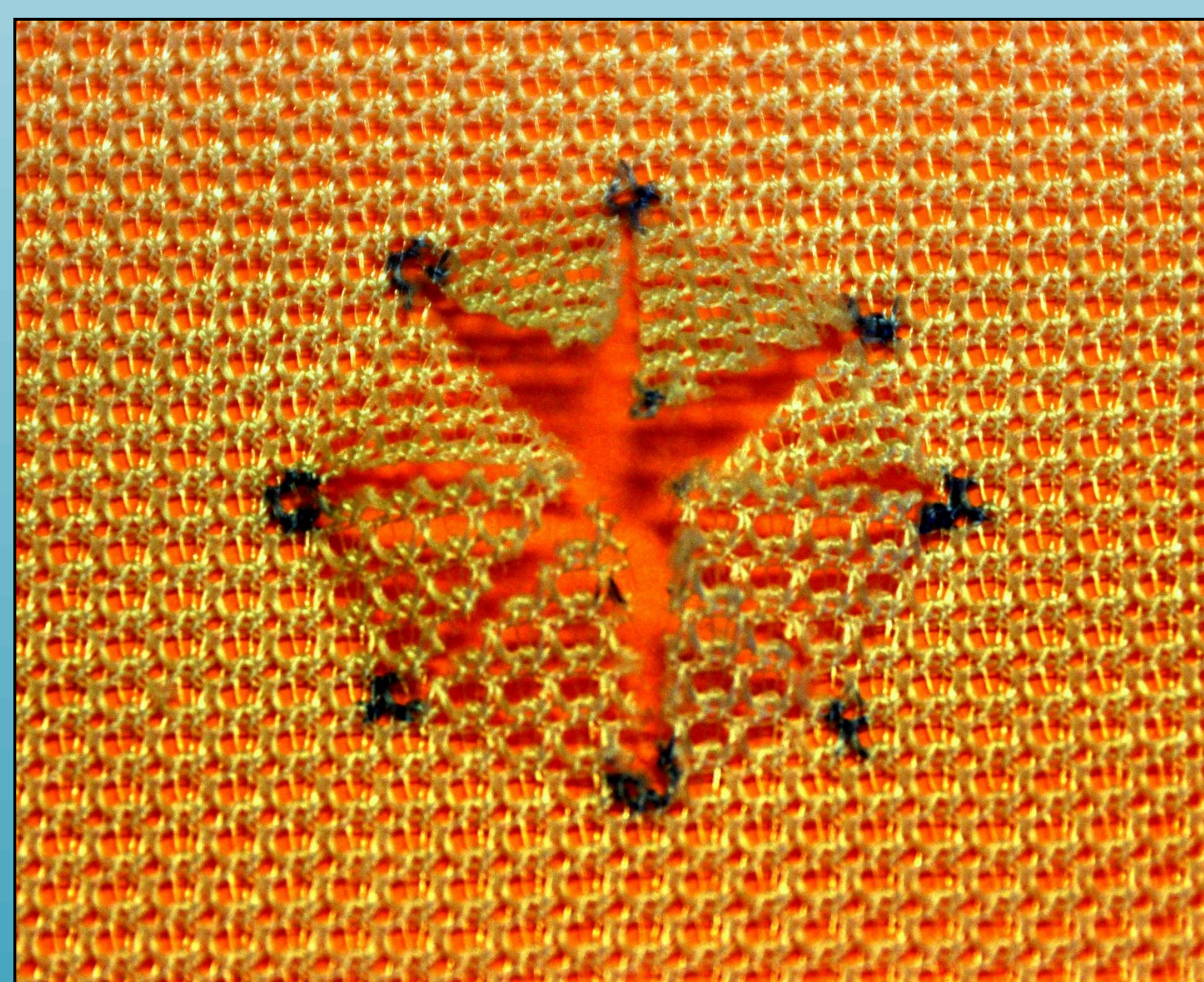
Short-term outcome after use of a prophylactic mesh in emergency stoma formation

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Introduction

- Parastomal hernias occur in up to 50% of the patients with a GI stoma
- In elective surgery prophylactic insertion of a mesh around the stoma has reduced the incidence of parastomal hernias to 5 %



Aim

- To describe the 30-day complication rates after using a prophylactic synthetic slowly resorbable mesh in emergency surgery for prevention of parastomal hernia



Methods

- Prospective cohort study with a historic reference group
- **The Reference Group:** 117 patients undergoing emergency ileo- or colostomy formation in the two-year period prior to July 2012. No prophylactic mesh
- **The Mesh Group:** 109 patients undergoing emergency ileo- or colostomy from July 2012 to July 2014. A slowly resorbable synthetic prophylactic mesh (TIGR® Matrix Surgical Mesh, Novus Scientific Pte Ltd., Singapore) was inserted retromuscularly at the stoma site
- 30-day data were collected from patient files including operative time, blood transfusion, complications, reoperation, intensive care therapy and mortality

Results

- No significant differences between the groups according to demography and perioperative data
- The postoperative 30-day rate of complications, morbidity, reoperations and mortality showed no significant differences between the two groups
- Two cases in the mesh group with an extraperitoneal perforation of the ostomy bowel, one of these was possibly due to mesh erosion
- Operative time was significantly longer in the mesh group

Pre- and postoperative data	Reference Group N=117	Mesh Group N=109	P
Indications for surgery			0.42
Obstruction or perforation, benign	54 (46%)	42 (39%)	
Obstruction or perforation, malignant	22 (19%)	24 (22%)	
Anastomotic leakage	21 (18%)	22 (20%)	
Vascular insufficiency	7 (6%)	12 (11%)	
Colitis	8 (7%)	5 (5%)	
Ostomy complications	4 (3%)	4 (4%)	
Necrotizing fasciitis	1 (1%)	0	
Peritoneal accumulation			0.14
None or ascites	63 (54%)	52 (28%)	
Pus	26 (22%)	21 (19%)	
Fecal	28 (24%)	34 (31%)	
Unknown	0	2 (2%)	
Operation time, median (iqr), minutes	151 (101-213)	188 (131-241)	<0.0005
Complications requiring reoperation	24 (21%)	25 (23%)	0.66
Burst abdomen	10 (9%)	6 (6%)	
Stoma related	7 (6%)	6 (6%)	
Bowel obstruction	4 (3%)	5 (5%)	
Intra abdominal abces	3 (3%)	2 (2%)	
Bowel perforation	1 (1%)	5 (5%)	
Bowel necrosis	1 (1%)	1 (1%)	
Gastric ulcer perforation	0	1 (1%)	
Anastomotic leakage	1 (1%)	0	
Other complications	53 (45%)	70 (64%)	0.14
Sepsis	30 (26%)	47 (3%)	
Respiratory	14 (12%)	14 (13%)	
Superficial wound infection	11 (9%)	17 (16%)	
Cardiovascular	10 (9%)	8 (7%)	
Intraabdominal absces	7 (6%)	6 (6%)	
Urogenital	6 (5%)	1 (1%)	
Stroke (cerebral)	4 (3%)	1 (1%)	
Short bowel syndrome	2 (2%)	3 (3%)	
Stoma related wound infection	1 (1%)	3 (3%)	
Gastrointestinal bleeding	0	4 (4%)	
Other	1 (1%)	3 (3%)	
Mortality	19 (16%)	16 (15%)	0.75

Stoma-related complications within 30 days	Reference Group	Mesh Group	P
Available for analysis	117	109	
Superficial surgical site infection not requiring reoperation within 30 days:	1 (1%)	3 (3%)	0.36
Complications requiring re-operation within 30 days:	7 (6%)	6 (6%)	0.88
Necrosis of the ostomy bowel	5 (5%)	2 (2%)	
Intraabdominal abces	0	1 (1%)	
Failed attempt to reverse the ostomy due to prolapse	1 (1%)	0	
Intestinal obstruction	1 (1%)	1 (1%)	
Extraperitoneal perforation of the bowel	0	2 (2%)	
30-day clinical follow-up			
Available for analysis	80	85	
Stoma related complications	14 (18%)	23 (27%)	0.093
Stomal tissue retraction	13 (16%)	22 (26%)	
Peristomal bulging	0	1 (1%)	
Peristomal infection	1 (1%)	0	
Stomal prolapse	0	0	

Conclusions

- Use of a resorbable synthetic mesh during emergency ostomy formation was safe although surgery was often conducted in a severely contaminated field
- Long-term follow-up studies are warranted to fully assess the place for a synthetic mesh in stoma-formation under emergency surgery