Asymptomatic Mesh Migration Following Hernia Repair: A Review of Current Literature and Case Report

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Introduction

Over 20 million hernia repairs are performed globally every year, and with the widespread adoption of mesh implantation, and the 2018 HerniSurge Guidelines, recurrence rates have significantly reduced. However, these guidelines emphasize a lack of definitive evidence for recommendations regarding mesh type, surgical approach, and fixation techniques, as well as commented on potential underreporting of adverse effects such as mesh erosion (partial displacement into an organ) and migration (complete translocation of the mesh). This review aims to use an atypical case presentation of mesh migration as a framework to discuss a comprehensive review of literature from the past twenty years, summarizing instances of mesh migration and the details of these reports to better inform future recommendations.

Case Report

A 39-year-old male with a history of morbid obesity, diabetes mellitus, gastroesophageal reflux and hypertension presented with complaints of chronic abdominal pain with an associated reducible umbilical mass present for the past seven years and underwent an elective robotic assistant ventral hernia repair revealing necrotic tissue requiring placement of Ovitex Biomesh.

Patient presented for a routine colonoscopy ten months later to discover a large fungating mass in his transverse colon, subsequent biopsy and CT revealed evidence of mesh migration. Patient denied any symptoms at this time. Exactly one year postoperatively the patient had a robotic sigmoid colon resection, adhesiolysis and repaired the ventral hernia with Ovitex Biomesh.

Patient recovered well and was discharged home. Four months later a colonoscopy confirmed the anastomosis was functional and eleven months postoperatively presented to clinic without complaints.

Conclusions

This case and literature review emphasizes the importance of increased surveillance postoperatively for post-hernia repair with mesh and suggests even asymptomatic presentations could be at risk for severe adverse outcomes.

Methodology, Data, & Imaging

A search was conducted in PubMed and Google Scholar using the keywords “mesh migration,” “hernia repair” and “mesh erosion” focusing on studies published between 2004 and 2024. Inclusion criteria included case reports, case series, meta-analyses, and literature reviews addressing mesh migration or erosion written in English. Data was extracted from 29 studies, summarizing mesh type, hernia type, migration location, presenting symptoms, and management.

Table 1. Summary of Literature Documenting Mesh Migrations from 2004 to 2024

Study	Year	Age	Type	Approach	Material	Migration	Presentation	Months to Event
Chowbey	2006	45	Inguinal	Laparoscopic	Unknown	Bladder	Enterocutaneous fistula	unknown
Goswami	2007	66	Inguinal	Laparoscopic	Polypropylene	Cecum	Diarrhea	10
Falik	2009	64	Ventral	Open	Polypropylene	Jejunum	Pain	60
Steinhagen	2010	62	Incisional	Open	ePTFE	Small Bowel	SBO	1
Horzic et al	2011	58	Incisional	Open	Composite	Rectum	Pain	2
Gandhi	2011	56	Incisional	Open	Polypropylene	Cecum	Pain	14
Nelson Vido	2011	65	Ventral	Open	Composite	Sigmoid	Enterocutaneous fistula	5
Voisard	2013	71	Incisional	Laparoscopic	Composite	Small Bowel	SBO	5
Su and Chan	2014	77	Ventral	Open	Unknown	Bladder	Dysuria	1
Al-subaie	2015	52	Inguinal	Laparoscopic	Polypropylene	Sigmoid	Rectal bleeding	3
Malik	2015	55	Incisional	Open	Polypropylene	Ileum	Enterocutaneous fistula	5
Millas	2015	41	Ventral	Open	Composite	Sigmoid	Pain	2
Norton et al	2016	69	Ventral	Open	Polypropylene	Transverse Colon	Pain	1.5
Asano	2017	63	Inguinal	Open	Polypropylene	Cecum with entervesicular fistula	Dysuria	6
Picchio	2017	62	Incisional	Open	Polypropylene	Ileum	Pain	18
Narang	2018	49	Inguinal	Laparoscopic	Polypropylene	Cecum	Diarrhea and pain	3
Ceci	2018	76	Incisional	Open	Composite	Ileum	Pain	14
Tsapralis	2018	55	Inguinal	Open	Polypropylene	Transverse Colon	Obstruction	2
Persson	2019	78	Ventral	Laparoscopic	Polyester	Transverse Colon	Pain	6
Saxena Saini	2019	62	Incisional	Open	Polypropylene	Ileum	Enterocutaneous fistula	10
Triantafyllou	2019	72	Recurrent Incisional	Open	Unknown	Small Bowel	Asymptomatic	2
Lee	2020	94	Incisional	Open	Polypropylene	Rectum	Pain	14
Jangjoo	2022	62	Incisional	Laparoscopic	Unknown	Small Bowel	Pain	5
Lorentziadis	2023	46	Incisional	unknown	Polypropylene	Jejunum	Pain	8
Zhang	2023	67	Parastomal	Laparoscopic	Unknown	Colon	Pain	3
Jallali	2024	52	Incisional	Open	Polypropylene	Small Bowel	Pain	10
Mistry	2024	78	Ventral	Laparoscopic	Composite	Ileum	SBO	1.5
Koliakos	2024	82	Inguinal	TAPP	Polypropylene	Sigmoid	Enterocutaneous fistula	2
Koliakos	2024	83	Inguinal	Open	Unknown	Sigmoid	Colocutaneous fistula	20

Table 1. Summary of literature review from 2004 to 2024 of articles describing mesh migration cases focusing on hernia type, mesh selection, patient presentation, complications and time to events.

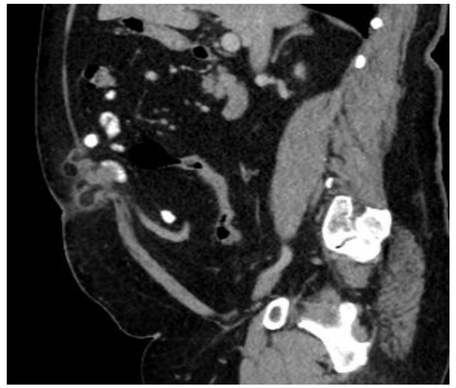


Figure 1. Sagittal CT images of the abdomen and pelvis after abnormal findings on colonoscopy.

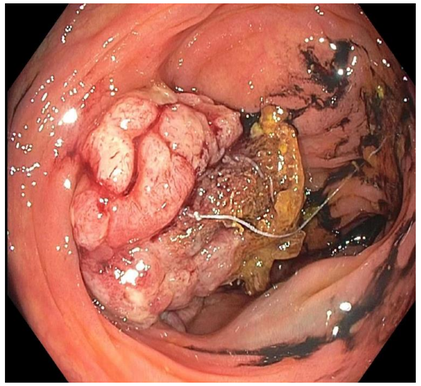
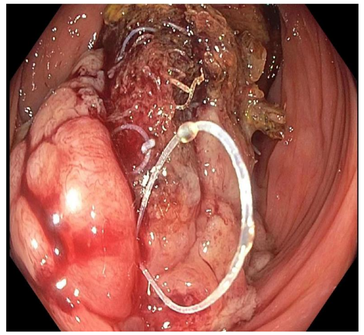


Figure 1a-b (above and below). Images taken during colonoscopy of a frond-like/villous and fungating non-obstructing, non-circumferential large mass in the descending colon.



Results

- Polypropylene mesh (45%) was the most frequently associated with migration, followed by composite mesh (34%).
- 62% of cases were reported within five years of the procedure
- Only one reported asymptomatic presentation.
- Most common presentation was pain (41%), obstruction (24%), enterocutaneous fistula (24%), and changes in bowel habits (21%).
- 21 (73%) cases required small bowel or colonic resection.

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