

A not-so-empty pelvis syndrome: a case report of the unusual use of a breast implant finding a new home

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Abstract

One complication of pelvic exenteration involving the removal of pelvic organs is empty pelvis syndrome (EPS). Following surgery, the empty space might cause fluid collection and small bowel adhesion to the pelvic floor, potentially leading to fistula formation, pelvic abscess, or chronic infection. To treat EPS, silicone breast prostheses are sometimes placed in the pelvic cavity. This technique is considered a simple and safe method for managing EPS, although it is not a common practice, and more research is needed to fully understand its efficacy and potential complications. We present the clinical case of an oncology patient who underwent a Hartmann's colonic resection, in whom a breast implant was placed in the pelvic cavity to fill the empty space left by the surgical excision. The patient presented to the emergency department with abdominal pain, fever, rectal discharge suggestive of an enterorectal fistula, and symptoms of intestinal obstruction.

Key words: breast implant, bowel obstruction, pelvis.

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Introduction

Empty pelvis syndrome (EPS) is a consequence of pelvic exenteration, a procedure frequently used for advanced pelvic cancers, consisting of the removal of all or part of the pelvic organs (bladder, rectum, anus, womb, ovaries). Pre-treatment radiotherapy and chemotherapy, which can cause tissue damage, as well as surgical procedures and interventions that inadvertently create an empty pelvic space, can increase the risk of EPS.

Bowel loop displacement into the pelvic dead space following surgery can result in problems like chronic perineal sinus disease, pelvic sepsis, abscesses, and fistulas, and it can be a possible cause of bowel obstruction.¹

Implanting silicone breast prostheses in the pelvic cavity is one strategy used to try to reduce EPS. By filling the pelvic dead space, this procedure can also protect bowel loops from radiation therapy side effects and other post-operative problems, including bowel obstruction.²

The following clinical case highlights the need for more research and evidence to demonstrate the true utility of using silicone breast prostheses to fill this empty abdominal-pelvic space.

Case Report

A 65-year-old man presented to the emergency department with complaints of persistent abdominal pain and fever over the past sev-

eral months. Additionally, the patient reported the passage of enteric material from the anus despite having a definitive colostomy.

The patient's past medical history included a diagnosis of metastatic rectal adenocarcinoma. He reported the initial presentation with altered bowel habits and rectal bleeding. Diagnostic imaging and biopsy confirmed the presence of a rectal adenocarcinoma with hepatic metastases.

The patient underwent an anterior rectal resection according to the Hartmann procedure, consisting of resection of the rectal tumor with creation of a definitive end colostomy and closure of the distal rectal stump according to the standard surgical technique. Histopathological examination confirmed an advanced rectal adenocarcinoma staged as pT4N2 with microscopically positive resection margins (R1). Following multidisciplinary oncologic evaluation, the patient was started on adjuvant radiotherapy combined with systemic chemotherapy. Although the treatment was initially well tolerated, follow-up imaging demonstrated progressive disease with an increase in both the size and number of hepatic metastases despite ongoing systemic therapy. Due to progressive clinical deterioration, chemotherapy was discontinued 2 weeks before admission to the emergency department.

At clinical examination, the patient was febrile with a body temperature of 38.5°C and mildly hypotensive (blood pressure 100/60 mmHg). Arterial blood gas analysis revealed metabolic acidosis with a pH of 7.22 and lactate levels of 2 mmol/L. Laboratory investigations showed marked leukocytosis (white blood cells 23,000/mm³) with significant neutrophilia (85%) and elevated C-

reactive protein levels (25 mg/dL), consistent with an ongoing inflammatory and septic process. Abdominal examination revealed mild tenderness in the lower quadrants with signs of early peritonitis, while inspection of the colostomy showed no evidence of obstruction or local infection. The patient also had a history of two previous surgical reinterventions for bowel obstruction. Given the persistent passage of enteric material through the anus despite definitive colostomy, the development of a fistulous communication or incomplete fecal diversion was suspected, and further diagnostic evaluation was undertaken to confirm the diagnosis.

The abdominal CT scan, with and without contrast, revealed the presence of an intestinal obstruction and the presence of a foreign body in the pelvic cavity, and disease progression at the hepatic level (Figure 1).

The patient underwent a median exploratory laparotomy. During the surgical procedure, adhesiolysis was performed, followed by a careful exploration of the pelvic region, where a breast implant was found (Figure 2), positioned in the pelvic cavity during the previous surgery to close the empty pelvic space. Some loops of the small intestine had adhered to the implant. The presence of a fistula between the small intestine and the rectal stump was confirmed.

The breast implant was removed (Figure 3). An ileocecal resection was performed as the last ileal loop was convoluted with the rectal fistula and with a carcinosis implant. Sutures were placed on the rectal stump, and biopsies were taken. After repeated irrigation of the abdominal cavity, abdominal drains were placed, and the abdomen was closed. The postoperative course was uneventful. The stoma began to discharge feces and gas on the third day. The patient continued to experience serous and blood loss from the anus, which gradually decreased over time.

The postoperative course was uneventful. The stoma began to discharge feces and gas on the third day. The patient continued to experience serous and blood loss from the anus, which gradually decreased over time. The patient was discharged on the seventh postoperative day, afebrile, with oral intake well tolerated, and both the abdomen and surgical wound were in good condition. The biopsies demonstrated the presence of residual tumor tissue at the level of the rectum. The patient is currently alive and has resumed chemotherapy treatment (Table 1).

Discussion

EPS is an abnormal anatomical condition resulting from demolitive pelvic surgery that creates an empty intraperitoneal pelvic space. Pelvic surgery is associated with postoperative morbidity rates of 34-80%³ and mortality of 0-6%.⁴ The main causes of EPS are low rectal resections with permanent colostomy, total colectomies, bilateral hysteroneussciectomy, and cystectomy.

EPS can significantly affect quality of life due to its complications. After pelvic surgery, the small bowel may migrate into the empty pelvic space, leading to recurrent bowel obstruction. Other manifestations include pelvic infection from fluid accumulation, chronic perineal sinus with persistent discharge, and systemic symptoms such as fatigue and fever.⁵ About 6% of patients require re-intervention to manage EPS.⁶

EPS complications, including small bowel obstruction, vary according to surgical technique, patient condition, and methods used to fill the pelvic space. The incidence of obstruction also depends on the type of surgery, such as hysterectomy or rectal resection, and individual risk factors.

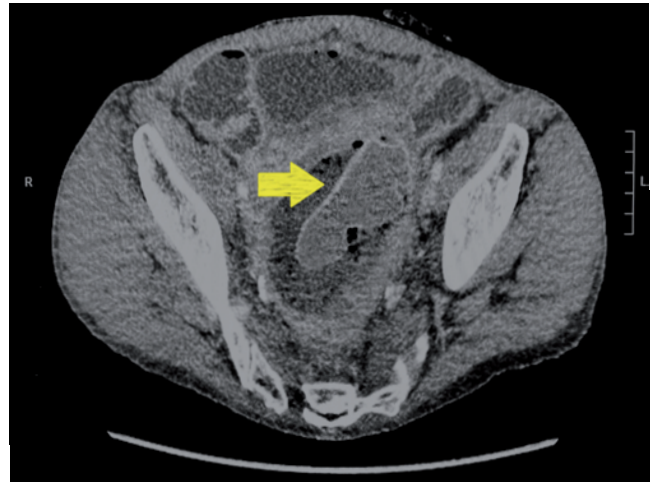


Figure 1. CT scan of the abdomen showing intestinal obstruction and the presence of a foreign body in the pelvis.

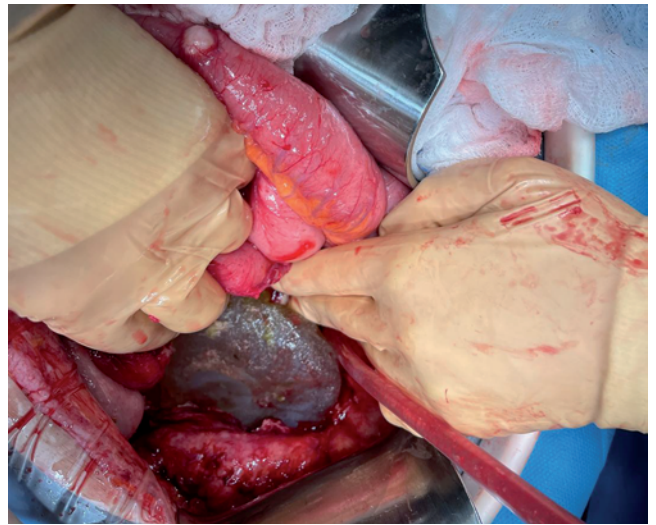


Figure 2. Breast prosthesis in the pelvic cavity; at the top of the picture, an ileal loop with carcinosis implants.

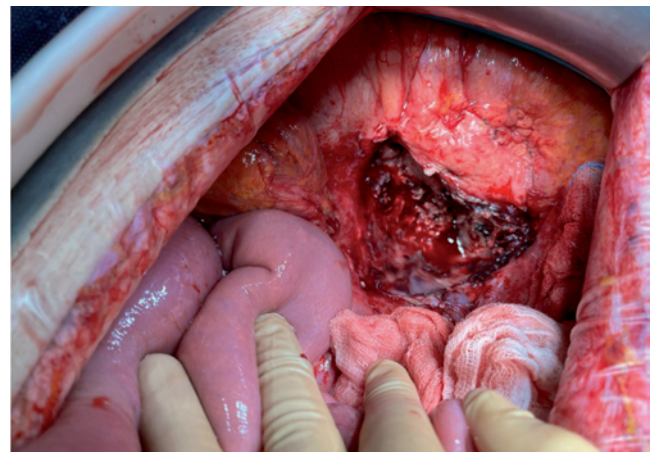


Figure 3. Empty pelvis after breast prosthesis removal.

Case Report

Efforts to address EPS include simpler approaches such as the use of mammary silicone implants to fill the pelvic cavity and displace bowel loops. This method is considered simple and safe, but remains uncommon and may be associated with potential risks and complications.

Valle *et al.*⁷ examined 28 patients who underwent mammary implant device positioning. They documented no implant removal due to infection, postoperative fever in four patients, one anastomotic leakage, and two periprosthetic hemorrhagic effusions. Carboni *et al.*⁸ examined 56 cases through a 14-year follow-up of instances in which pelvic exenteration complications were avoided by using breast prostheses. They documented three urinary tract infections, small bowel leaks, postoperative hemorrhage, two vaginal cuff dehiscences, six wound infections, and four surgical site infections. They reported a rate of about 7% for surgical site infection and for reoperation for small bowel leaks (7.1%), including three iatrogenic perforations and one anastomotic leakage following segmental resection. Implant removal was required in a patient who underwent R1 resection due to vaginal cuff dehiscence 3 months after surgery.

In both articles, the sample size was small and patients were enrolled over long periods in non-randomized studies. Quality of life was not assessed using validated questionnaires or dedicated tools.

Implantation of a breast prosthesis in the pelvis in patients undergoing palliative surgery with residual disease, as in the case presented, may increase the risk of rectal stump dehiscence, pelvic inflammation and infection, abscess formation, fluid collections, and fistulas. The large, poorly vascularized pelvic space is particularly prone to abscess formation, and this risk is further increased in the presence of residual tumor.

The reviewed literature does not report cases of R1 surgery, where residual disease may create a more favorable environment for inflammatory reactions, fistula formation, and abscesses in the presence of a pelvic foreign body.

Breast implant implantation involves local and systemic complications⁹ that, in the treatment of EPS, cannot be ignored, such as rupture over time, often occurring silently, with possible spread of silicone to the surrounding tissues; dislocation or rotation, in which the implant may move from its original position; and chronic seroma, consisting of persistent accumulation of fluid around the implant, with a risk of inflammation or infection.¹⁰

Although the present case was initially framed within the concept of EPS, it should be emphasized that it does not reflect the classical anatomical scenario observed after radical or exenterative pelvic surgery. The patient had previously undergone an anterior rectal resection with partial mesorectal excision at another institution, and therefore a completely empty pelvis was not present. Nevertheless, a deep pelvic cavity was observed, allowing pathological small bowel descent into the pelvis, which was associated with recurrent episodes of bowel obstruction. In this setting, the rationale for implant placement was not the reconstruction of a truly empty pelvis, but rather the functional reduction of pelvic dead space and the prevention of small bowel migration into a confined pelvic compartment. This case therefore broadens the potential indication for such implants beyond the traditional definition of EPS, suggesting a possible role in selected patients with deep pelvic anatomy and recurrent obstructive symptoms due to bowel displacement.

In the present case, the causal relationship between the breast implant and the observed complication should be interpreted with caution. The clinical course likely reflects a multifactorial process occurring in a hostile pelvic environment. Several concomitant factors may have contributed, including disease progression, possible peritoneal carcinomatosis, residual pelvic disease, and the presence of a previously operated deep pelvic cavity. Moreover, the introduction of a prosthetic material may increase the risk of complications such as infection, displacement, or erosion. In this context, the

Table 1. Table displaying the timeline with pertinent clinical information.

Time	Clinical events	Diagnostic findings	Management/outcome
Initial presentation (6 months before current admission)	Altered bowel habits, rectal bleeding, and obstructive symptoms	Diagnosis of occluding rectal adenocarcinoma, stage pT4N2, R1 resection, with liver metastases	Multidisciplinary oncologic evaluation
Month 0	Hartmann procedure with end colostomy	Advanced rectal cancer confirmed at pathology	Anterior rectal resection with closure of rectal stump
Postoperative period	Adjuvant oncologic treatment initiated	Progressive metastatic liver disease during treatment	Radiotherapy and systemic chemotherapy
2 weeks before ED admission	Ongoing oncologic treatment interrupted	Clinical deterioration	Chemotherapy discontinued
Month +6	Persistent abdominal pain, fever, and passage of enteric material through the anus despite definitive colostomy	Suspicion of fistulous communication	ED admission
ED evaluation	Mild lower abdominal tenderness and signs of early peritonitis	CT scan showed bowel obstruction, pelvic foreign body, and progression of hepatic metastases	Surgical indication established
Intraoperative findings	Pelvic foreign body identified as breast implant with adherent ileal loops and entero-rectal fistula	Peritoneal carcinosis implants involving ileal loops	Adhesiolysis, implant removal, ileocecal resection, rectal stump suturing, abdominal drainage
Postoperative course	Progressive reduction in anal discharge	Uneventful recovery	Return of fecal and gas output from stoma on postoperative day 3

implant may have contributed to the adverse event observed, although it cannot be considered the sole causative factor.

Additionally, prior oncologic treatments, such as radiotherapy when applicable, may have further impaired tissue integrity and healing capacity. Within this complex setting, the implant should be regarded as a potential contributing factor rather than the primary determinant of the outcome. This interpretation better reflects the interplay between local disease burden, treatment-related changes, and the presence of a foreign body.

The use of a breast implant in the management of EPS remains a technically appealing option to obliterate pelvic dead space; however, its behavior in a compromised oncologic field is not fully predictable. Within this complex and potentially hostile pelvic environment, the implant should not be considered the sole or predominant cause of the adverse outcome. Rather, it may have acted as a contributing factor in a multifactorial setting, where altered anatomy, impaired healing, and ongoing disease all likely played a role.

Conclusions

Pelvic exenteration is a complicated surgery with significant postoperative dangers as well as long-term functional and psychological effects on patients. Managing EPS often requires a multidisciplinary approach, including medical treatments, surgical interventions, and supportive care to improve the quality of life for affected individuals. Scientific literature on this topic is limited.

Given the intrinsic limitations of a single case report and the incomplete availability of all potential confounding variables, no definitive conclusions can be drawn regarding the safety or efficacy of breast implants in the treatment of EPS. Rather than supporting a generalized indication, the present report should be interpreted as a cautionary example highlighting potential risks in selected high-risk patients.

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Conflict of interest: the authors have no conflict of interest to declare.

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Consent for publication: the patient gave his written consent to use his personal data for the publication of this case report and any accompanying images.

Availability of data and materials: all data underlying the findings are fully available.

Further information: this case report was presented in the poster section of the 25th European Congress of Trauma and Emergency Surgery (ESTES) and 8th World Trauma Congress (WTC), held in Stockholm from April 26 to 29, 2026.

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