Lymphatic Injury at Sacrocolpopexy: An Unusual Complication

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Abstract

Background: Lymphorrhea is a rare condition with a paucity of reports in the gynaecologic literature. The most frequent causes are invasive procedures and surgical interventions.

Case: A multiparous woman underwent a total abdominal hysterectomy with prophylactic bilateral salpingectomy and abdominal sacrocolpopexy for pelvic organ prolapse. During retroperitoneal dissection, clear fluid discharge was encountered. Ureteric injury was subsequently ruled out. A sample of the fluid was taken to confirm lymphatic injury. Ligation suture and closing the peritoneum slowed fluid drainage.

Conclusion: To our knowledge, this is the first reported lymphatic injury in association with a urogynaecologic procedure. Gynaecologists should be aware of this potential complication and should have an approach to diagnosis and management. This case highlights the importance of intraoperative consultation.

Résumé

Contexte : La lymphorrhée est un trouble rare n'ayant fait l'objet que de très peu de signalements au sein de la littérature gynécologique. Les interventions effractives et les interventions chirurgicales en constituent les causes les plus fréquentes.

Cas : Une femme multipare a subi une hystérectomie abdominale totale (s'accompagnant d'une salpingectomie bilatérale prophylactique) et une sacrocolpopexie abdominale (pour contrer le prolapsus des organes pelviens). Au cours de la dissection rétropéritonéale, un écoulement de liquide transparent a été constaté. La présence d'une lésion urétérale a par la suite été écartée. Un échantillon de ce liquide a été prélevé afin de confirmer la présence d'une lésion lymphatique. La mise en place de ligatures et la fermeture du péritoine ont ralenti le drainage du liquide.

Conclusion : À notre connaissance, il s'agit du premier signalement d'une lésion lymphatique associée à une intervention urogynécologique. Les gynécologues devraient être à l'affût de cette complication potentielle et disposer d'une approche envers son diagnostic et sa prise en charge. Ce cas souligne l'importance de la consultation peropératoire.

Key Words: Lymphatic injury, lymphatic vessels, sacrocolpopexy, gynaecologic surgical procedures, pelvic organ prolapse, laparotomy

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INTRODUCTION

Lymphorrhea, also known as chylorrhea, is a rare condition and is defined as pathological lymphatic flow due to a leakage of lymphatic vessels.[1] This can manifest in the form of a lymphocutaneous fistula, lymphocele, chylous ascites, or chylothorax.[1] The anatomy of deep lymphatic vessels is highly variable, with multiple complex capillary networks aggregating into the cisterna chyli, which is consistently located at the level of the first and second lumbar vertebrae and which drains into the thoracic duct and ultimately into the left subclavian vein.[1,2] The most frequent causes of traumatic damage to deep lymphatic vessels are invasive procedures and surgical interventions, but, because postoperative lymphorrhea rarely occurs, there is little clinical experience available to aid management.[1] A Medline search of the gynaecologic literature revealed a paucity of data, with citations mainly limited to oncology practice and little information related to other gynaecologic retroperitoneal dissection procedures. Ghezzi et al.[3] compared the incidence of perioperative complications after different interventions in patients who underwent laparoscopic pelvic lymphadenectomy for endometrial cancer staging. In 261 patients who underwent postoperative screening for lymphadenectomy-related complications by ultrasound, lymphoceles were diagnosed in 15.4% of patients who had open staging and 1.4% of patients

who had laparoscopic staging.[3] Lymphorrhea occurred in 0.7% and 3.1% of patients, respectively.[3] The authors noted that few preventive strategies have proven truly effective in preventing the formation of lymphoceles.[3]

We report here our experience of a lymph vessel injury during an abdominal sacrocolpopexy via laparotomy for pelvic organ prolapse, highlighting our diagnostic approach and the importance of intraoperative consultation.

THE CASE

A 42-year-old multiparous woman presented with symptoms of pelvic pressure due to uterine fibroids and pelvic organ prolapse. She had a history of three previous non-operative vaginal deliveries, one previous Caesarean section, and no other pelvic or abdominal surgery. She had no significant past medical history.

Pelvic examination showed the presence of a bulky uterus with multiple fibroids and stage II uterine prolapse. Urodynamic assessment did not demonstrate any preoperative stress urinary incontinence. The patient provided consent to undergo total abdominal hysterectomy with bilateral prophylactic salpingectomy and abdominal sacrocolpopexy with polypropylene mesh.

The previous Pfannenstiel incision was used for entry. Abdomino-pelvic anatomy was normal except for a multifibroid uterus equivalent in size to a 14-week pregnancy. The abdominal hysterectomy and bilateral salpingectomy were uncomplicated. Dissection of the anterior and posterior vaginal walls, followed by attachment of anterior and posterior mesh strips, was also uncomplicated. We then proceeded to anterior sacral dissection and accessed the retroperitoneal space. Staying in the midline at the level of the first sacral vertebra, we dissected the fibrofatty tissue using careful electrosurgery and cotton peanut sponges. Although the anatomy was unremarkable and dissection was routine, a sudden, clear, continuous fluid discharge was encountered, suggesting a possible ureteric injury. Intravenous methylene blue was administered, and blue-coloured urine was noted in the Foley bag with no spillage of dye into the abdomen. Clear retroperitoneal fluid continued to drain slowly.

Intraoperative consultation with a urologist was requested. Because of the possibility of an injury to a lymphatic channel, a 10 mL sample of fluid was collected and sent to the laboratory to measure fluid triglyceride and creatinine levels. A sample of venous blood was drawn for comparison of plasma triglyceride and creatinine levels.

While waiting for the urologist, we dissected along the infundibulopelvic ligament to delineate the course of the ureter. The right ureter was definitively identified and, by following its course inferiorly, we found it to be superior and lateral to the area of sacral dissection and fluid drainage.

After the consulting urologist arrived, cystoscopy was performed, and bilateral ureteric jets were noted. Bilateral ureteric stenting was performed, followed by methylene blue infiltration into the stents. Methylene blue efflux was noted on cystoscopy, and no spillage into the abdomen was noted. The left ureter was clear of the surgical site, considered intact by intraperitoneal stent palpation, and was not surgically dissected. Clear fluid continued to drain slowly.

After a ureteric injury was ruled out, the procedure was continued with a presumptive diagnosis of lymph vessel injury. A single interrupted ligation suture was attempted at the site of drainage, partially slowing the rate of fluid loss. Sacrocolpopexy was continued with placement of two sacral sutures at the S1 vertebral level using 2-O Ethibond suture (Johnson & Johnson Inc., Markham ON). The sutures were clearly localized to the anterior sacral ligament and were anterior to vertebral bony tissue. The polypropylene mesh was secured to the sacral sutures, further diminishing the efflux of lymph. Peritoneum was closed above the mesh. The combination of suture placement and closing the peritoneum slowed down the rate of fluid leakage, and it was decided not to insert a drain for postoperative drainage.

At the end of the procedure, laboratory analysis of the intraperitoneal fluid was not available. After approximately four hours, the laboratory reported the fluid sample as having a high triglyceride concentration, noting: "This finding suggests presence of chylous fluid in sample" (Table). Further analysis by air centrifugation identified the presence of chylomicrons.

The patient's postoperative recovery was uncomplicated. She did not express discomfort out of proportion to that expected from a Pfannenstiel incision and did not develop an ileus. Because of the lymph injury, only ice chips were given by mouth on the day of surgery, but the patient was able to take solid food on the first postoperative day. She was discharged on the second postoperative day.

At six weeks postoperatively, the patient reported ongoing mild abdominal pain and fatigue, with normal bladder and bowel function. Physical examination revealed a well-healed abdominal incision, no evidence of intra-abdominal fluid collection, and satisfactory resolution of pelvic organ prolapse with no mesh erosion or vaginal tenderness.