

MASSIVE LYMPHOCELE FOLLOWING PELVIC LYMPHADENECTOMY FOR STAGING OF PROSTATIC CANCER

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ABSTRACT

Two patients developed massive pelvic lymphoceles within 30 days of retroperitoneal node dissection for staging of prostatic cancer. Excised lymph nodes were negative for metastases. Both patients developed severe bilateral peripheral edema, and one developed pulmonary thromboembolism from intraluminal thrombi in the adjacent, compressed inferior vena cava. Each patient responded to unroofing of the cyst wall with either concomitant external or internal drainage.

Pelvic lymphoceles are a relatively common complication of retroperitoneal dissection (e.g., staging laparotomies for urologic and gynecologic cancer, aortic reconstruction, and renal transplantation) (1-4). As circumscribed collections of retroperitoneal lymph, they most likely arise from division and inadequate ligation of paraaortic lymphatic trunks and usually disappear spontaneously (1-3). We describe, however, two patients with particularly large pelvic lymphoceles following paraaortic dissection for staging of prostatic cancer who required unroofing of the cyst and definitive drainage for effective treatment.

CASE REPORTS:

1. A 66-year-old man underwent limited pelvic lymphadenectomy and prostatic implantation of iodine-125 seeds for management of clinically localized moderately differentiated prostatic adenocarcinoma. Subcutaneous heparin (5000 units) was administered preoperatively and continued every 12 hours for 5 days. Histopathology of the excised lymph nodes was negative for metastatic disease. Thirty days later, the patient returned with a 6-day history of massive abdominal distension (*Fig. 1a*), bilateral leg edema, and shortness of breath. Pulmonary ventilation-perfusion radionuclide scintiscan was highly suggestive of pulmonary embolism. Abdominal ultrasound (*Fig. 1b*) revealed a fluid-filled mass extending from the bladder base to the left renal hilum with bilateral hydronephrosis. Intravenous urogram confirmed hydronephrosis with right-sided deviation of both ureters and elongation and narrowing of the bladder.

Aspiration of the mass revealed straw-colored fluid with rare white blood cells and no microorganisms. There was 4 plus protein; chylomicrons were absent, and culture of the fluid was sterile.

The patient was thought to have a massive lymphocele with iliac vein or vena

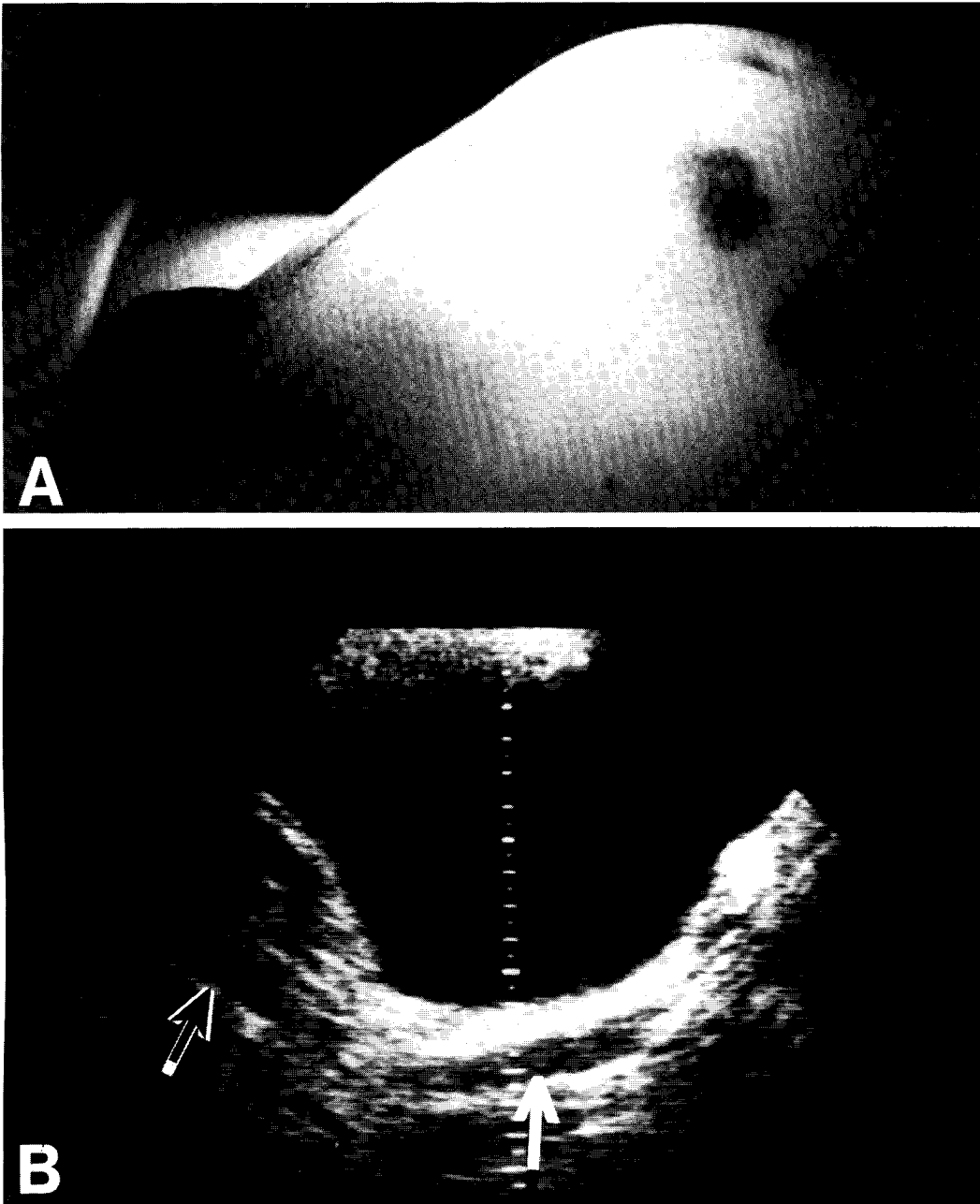


Fig. 1. (A) Massive abdominal distension one month after limited pelvic lymphadenectomy for staging of prostatic cancer. Lymph nodes were negative for metastases. (B) Abdominal ultrasonography demonstrating a fluid filled mass extending from the deep pelvis retroperitoneally to the left renal hilum (black arrow--left kidney; white arrow--aorta).

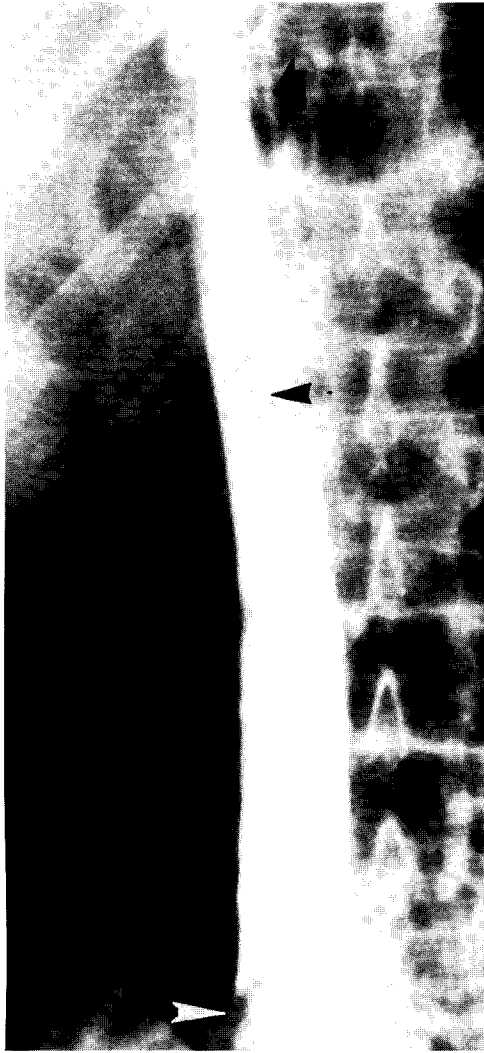


Fig. 2. Inferior vena cavagram demonstrating external compression (arrow) and intraluminal thrombi (arrowheads).

caval compression and pulmonary embolism. Accordingly, intravenous heparinization was reinstated. However, 8 days thereafter he developed left lower leg weakness. At laparotomy, 3800ml of gelatinous liquid was encountered extending from the deep pelvis retroperitoneally to the left renal hilum. The cyst wall was unroofed and multiple drains were inserted.

Despite anticoagulation and resolution of the lymphocele on ultrasonography, the patient had a second pulmonary embolism 6 days following operation. Phlebo-

graphy (*Fig. 2*) disclosed external compression of the inferior vena cava, and intraluminal thrombi. After placement of a Greenfield vena caval filter the subsequent course was uneventful. Three years later he is well without sign of residual carcinoma, thrombophlebitis, or pulmonary embolism.

2. A 77-year-old man underwent staging pelvic lymphadenectomy for well-differentiated adenocarcinoma of the prostate. Histopathology of the resected lymph nodes revealed no metastases. One month later he complained of progressive lower abdominal fullness and physical examination disclosed a large well-demarcated non-tender mass extending from the symphysis pubis to the umbilicus along with severe pitting edema of both legs (*Fig. 3*). Abdominal computed tomography revealed bilateral hydronephrosis and a huge fluid-filled mass (10.5x16.2cm) compressing adjacent bowel and blood vessels (*Fig. 3*). The image appearance was consistent with a large retroperitoneal lymphocele. Lymphangioscintigraphy was performed using a Toshiba GCA-90B digital camera. Whole body and sequential images were obtained up to 6½ hours after radionuclide injection. Five hundred μ Ci of 99m Tc bound tightly (92-99%) to human serum albumin (HSA) in 0.05ml was injected intradermally just above the digital web space between the first and second toes. A brief period of exercise (walking) was allowed after the first whole body images were obtained. Bilateral peripheral lymph trunks were promptly delineated, but in the pelvis, the lymphatic trunks appeared laterally splayed (*Fig. 4, left—compare with Fig. 5*). Post-exercise (*Fig. 4, right middle*) a small amount of tracer activity is seen in the region of the iliac-aorta bifurcation. Delayed scintiscan at 6.5 hours showed intense cardiac and liver uptake and also increased focal accumulation within the lower abdomen (*Fig. 4—right lower; compare with Fig. 5*). At reoperation the cyst wall was unroofed, 1200ml of straw-colored fluid was evacuated and a moderate "window" opened between the

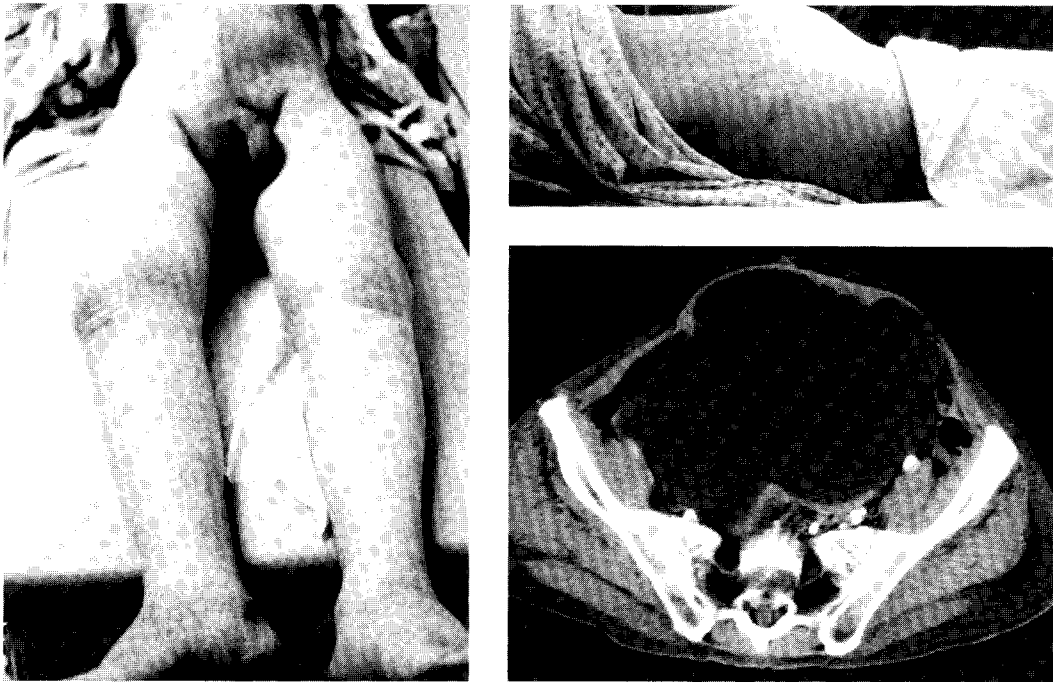


Fig. 3. Massive abdominal distension and severe peripheral edema 30 days after retroperitoneal node dissection for staging of prostatic adenocarcinoma. All excised lymph nodes were negative for tumor. Abdominal computed tomogram (lower right) demonstrates a massive fluid-filled encapsulated mass.

residual cyst wall and the posterior parietal peritoneum. Peripheral edema thereafter subsided and he has remained well. Repeat lymphangioscintigraphy 2 weeks postoperatively promptly visualized parailiac lymphatic trunks with pelvic tracer activity now following the expected course of parailiac lymphatic trunks (Fig. 5). Moreover, delayed images no longer demonstrated focal lower abdominal tracer accumulation (Fig. 5—compare with Fig. 4).

DISCUSSION:

Since the description of lymphocele following pelvic surgery by Gray and associates (5), similar reports have appeared including that of lymphocele formation following retroperitoneal lymph nodal dissection for prostate carcinoma (6). Catalonia et al (6) also noted an increased incidence of this complication, as in pa-

tient 1, receiving prophylactic mini-heparinization. On the other hand, serious venous thromboembolism secondary to pelvic lymphocele has also been described (7).

Ultrasonography and computed tomography are particularly useful in the diagnosis of postoperative lymphocele (8,9). The qualitative aspects of lymph flow can also be readily studied by lymphangioscintigraphy (10). As shown in patient 2, the large lymph cyst not only altered the pattern of lymphatic truncal flow in the pelvis but also demonstrated focal accumulation of the tracer within the expanding fluid-filled lymphocele itself.

Although most authors recommend nonoperative management of retroperitoneal lymphoceles (1-3), potential serious sequelae or massive size may mandate cyst evacuation with or without internal drainage.



Fig. 4. Preoperative lymphangioscintigram (patient 2) showing well-demarcated peripheral lymphatics with lateral displacement of retroperitoneal trunks (arrows). After exercise (right-middle) tracer activity is seen adjacent to the iliac-aortic bifurcation (arrowheads) and after 6 hours (right-lower) focal accumulation of the tracer is seen in the lower abdomen as well as in the heart and liver (compare with Fig. 5). Rounded densities are external markers at the knees, pubis, and xiphoid.

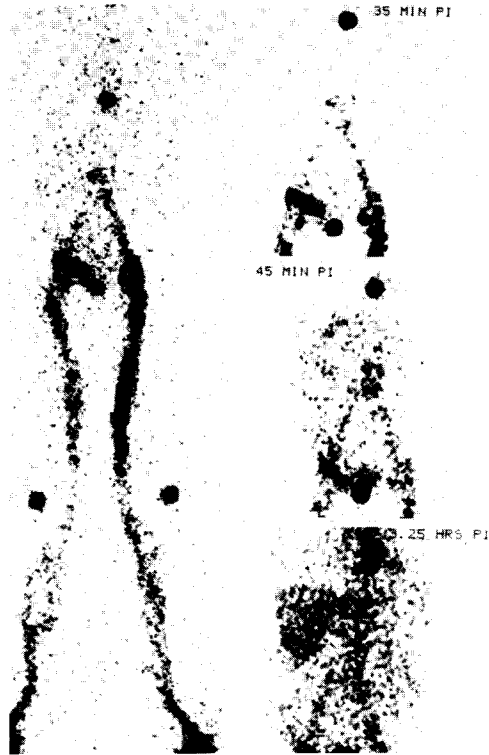


Fig. 5. Postoperative lymphangioscintigram (patient 2) 2 weeks after lymphocele drainage. Whole body image (left) now shows retroperitoneal lymphatic trunks following the expected course without tracer accumulation in the lower abdomen. (Compare with Fig. 4). Rounded densities are external markers at the knees, pubis, and xiphoid.

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BOOK REVIEW

A COLOUR ATLAS OF REDUCING OPERATIONS FOR LYMPHEDEMA OF THE LOWER LIMB

Author: N. Browse
Publisher: Year Book Medical Publishers, Inc., Chicago, Illinois, USA, 1986
Price: ~ \$44.50

In this short book, Mr. Browse provides the reader with all that he or she needs to know about the Homans and the Charles operations for lower limb lymphedema. Richly illustrated in color, most of this book deals with details of these procedures including preoperative preparation and postoperative care. The remainder of the book discusses and illustrates various aspects of the clinical,

radioisotopic and radiographic diagnosis of lower limb lymphedema and is apparently not meant to be comprehensive. Only a single page is devoted to conservative (nonoperative) therapy but Mr. Browse stresses that this approach is the appropriate one in approximately 90% of patients.

This book will be particularly useful to the surgeon whose practice includes only an occasional patient with lower limb lymphedema. It will also help more experienced surgeons improve their results with the Homans and Charles operations.

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