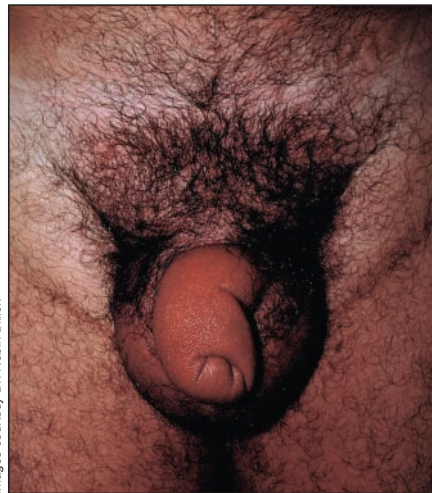
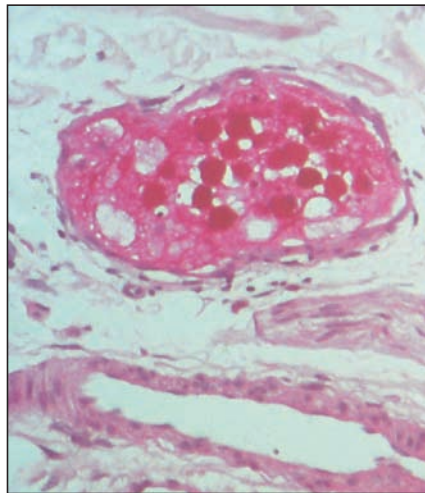


A man with painless scrotal swelling and peripheral edema



Images courtesy Dr. Robin Billick



A previously healthy 40-year-old man was referred by a urologist to our internal medicine clinic for evaluation of a 6-week history of painless scrotal swelling and subsequent ankle swelling. He had also gained 5 kg over the preceding 2 months. He described no dyspnea, fever, night sweats, dysuria, hematuria or penile discharge and no history of trauma, liver disease, heart disease or lymphatic disorders. He was not taking any medications.

The patient was afebrile with normal vital signs. He had decreased breath sounds at the right lung base, moderate painless pitting edema of his legs and mild abdominal distention with no ascites, masses, hepatosplenomegaly or stigmata of liver disease. He had bilateral, nontender axillary lymphadenopathy and a diffusely swollen scrotum and foreskin (Fig. 1).

Ultrasonography of the scrotum showed general edema but no testicular abnormalities, and a chest radiograph confirmed the presence of a right pleural effusion. Thoracentesis of the effusion revealed a chylous exudate (high in triglycerides) but no malignant cells on cytology, and culture results were negative for bacteria and fungi. Transthoracic echocardiography showed a normal cardiac ejection fraction and no pericardial effusion. Test results of liver, pancreatic and thyroid function were normal, as was the complete blood count except for mild lymphocytopenia (0.4 [normally

1.2–3.5] $\times 10^9/L$). Results of serologic tests for HIV and hepatitis B and C virus antibodies, carcinoembryonic antigen, antinuclear antibody, rheumatoid factor and antineutrophil cytoplasmic autoantibody were negative. A CT scan of the abdomen and pelvis with contrast medium showed a “misty mesentery” but no masses or lymphadenopathy. (“Misty mesentery” describes an increased density of the mesenteric fat due to increased cellularity, fluid accumulation, tumour deposition or fibrosis.)

Fig. 2 shows a high-power ($\times 400$) microscopic view of a random punch biopsy of the skin in the inguinal area (PAS-diastase stain), showing a collection of signet-ring cells, with darkly stained mucin, within a lymphatic channel. This pathology was confirmed on a subsequent biopsy of the left axillary lymph node. No lesions were found on esophagogastroduodenoscopy and colonoscopy, and random biopsies of the gastrointestinal tract yielded normal results. Chemotherapy was started for adenocarcinoma of unknown origin. The patient ultimately died 30 weeks after presentation. Autopsy showed signet-ring-cell involvement of the right middle lobe of the lung and the lymphatic system.

Signet-ring-cell carcinoma accounts for 1%–2% of all colorectal carcinomas.² It tends to be aggressive, with a poor prog-

nosis.² In signet-ring cells, the nucleus is displaced by mucin, which is secreted by neoplastic glands.³ Although most signet-ring-cell carcinomas originate from the gastrointestinal tract, cases have been reported of them originating in the breast,⁴ bladder,⁵ prostate⁶ and eyelid.⁷

Although the primary neoplastic site was not identified in the initial workup of our patient, we presumed that the disease had metastasized to the axillary and inguinal lymph nodes, leading to lymphedema, obstruction of the thoracic duct and chylothorax. Cases similar to ours, of signet-ring-cell carcinoma presenting as chylothorax and lymphedema, are rarely reported in the literature.⁸

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References

- Mindelzun RE, Jeffrey RB Jr, Lane MH, Silverman PM. The misty mesentery on CT: differential diagnosis. *Am J Roentgenol* 1996;167(1):61-5.
- Comptom C. *Pathology and prognostic determinants of colorectal cancer* [online review]. Wellesley (MA): UpToDate; 2002.
- Feldman M, Sleisenger MH, Scharschmidt BF, editors. *Sleisenger & Fordtran's gastrointestinal and liver disease: pathophysiology, diagnosis, management*. 6th ed. Philadelphia: Saunders; 1998. p. 1921.
- Kennebeck CH, Alagoz T. Signet ring breast carcinoma metastases limited to the endometrium and cervix. *Gynecol Oncol* 1998;71(3):461-4.
- Fiter L, Gimeno F, Martin L, Gomez Tejada L. Signet-ring cell adenocarcinoma of bladder. *Urology* 1993;41(1):30-3.
- Leong FJ, Leong AS, Swift J. Signet-ring carcinoma of the prostate. *Patrol Res Practice* 1996;192(12):1232-8.
- Clerici R, Conti G, Scarpini E, De Riz M, Baron PL, Scarlato G. Visual loss and enlarged extraocular muscles from metastatic signet ring carcinoma. *J Neurol* 2001;248(4):336-8.
- Mogulkoc N, Onal B, Gunel O, Bayindir U. Chylothorax, chylopericardium, and lymphoedema — the presenting features of signet-ring cell carcinoma. *Eur Respir J* 1999;13:1489-91.