

# Acute Scrotum due to Gallbladder Perforation after a Percutaneous Liver Biopsy

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Acute scrotum can occur as a complication of various procedures, such as open, laparoscopic surgeries or diagnostic procedures. We present an unusual case of acute hemiscrotum due to inadvertent gallbladder injury following an ultrasound-guided liver biopsy. (**Korean J Urol 2009;50: 721-723**)

**Key Words:** Testicular hydrocele, Needle biopsy

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Acute scrotum may occur as a complication of various surgical procedures and aggravation of an existing medical disease like acute pancreatitis.<sup>1</sup> Laparoscopic cholecystectomy<sup>2,3</sup> and appendectomy<sup>4,5</sup> may cause acute scrotum, and these cases usually show more aggressive manifestations and need surgical intervention. We present a case of an acute hemiscrotum due to gallbladder perforation after percutaneous ultrasound-guided liver biopsy, which was managed conservatively.

## CASE REPORT

A 25-year-old man with chronic pancreatitis was admitted to the department of gastroenterology and hepatology in my institution for evaluation of a liver mass. Since his treatment of acute pancreatitis 4 years ago, he had been frequently readmitted because of aggravation of symptoms associated with recurrent pancreatitis. He also suffered from non-insulin-dependent diabetes mellitus as a complication of the pancreatitis.

The patient underwent ultrasound-guided percutaneous liver biopsy to evaluate the hepatic mass. On the night after the procedure, the patient complained of abdominal discomfort and painful swelling of the left scrotum. He had mild fever and leukocytosis. Physical examination demonstrated left scrotal swelling with moderate tenderness on the whole left testis and

epididymis. A transillumination test of the left scrotum was positive. Scrotal Doppler ultrasound revealed the size and vascularity of both the testis and epididymis to be nonspecific and showed only left hydrocele. At that time, the patient showed peritoneal signs on the abdomen and an emergent computed tomography (CT) scan was also performed. The CT



**Fig. 1.** Computed tomography findings reveal a mildly enhanced and thickened gallbladder wall (arrow) with suspected gallbladder perforation, ascites, and hemorrhage in the abdomen and pelvic cavity.



**Fig. 2.** Computed tomography findings reveal ascites and hemorrhage in the abdomen and pelvic cavity (A) with fluid collection along the left inguinal canal and into the left scrotum (B) (arrow).

scan revealed a mildly enhanced and thickened gallbladder wall with suspected gallbladder perforation, ascites and hemorrhage in the abdomen and pelvic cavity (Fig. 1), and fluid collection along the left inguinal canal (Fig. 2A) down to the left scrotum (Fig. 2B). Conservative management was performed, which included the administration of broad-spectrum antibiotics, scrotal elevation, and local application of an ice bag. The swelling and tenderness of the left scrotum eventually disappeared 4 days after biopsy. The patient was discharged free of symptoms of both the scrotum and abdomen 10 days after the liver biopsy.

### DISCUSSION

Hydrocele as an acute scrotum following varicocele surgery is a well-known complication in urology. Esposito et al<sup>6</sup> reported the median incidence to be about 12%. The mechanism of hydrocele was thought to be a consequence of lymphatic ligation during varicolectomy.<sup>7</sup> The treatment options for hydrocele after varicocele surgery include clinical observation, scrotal puncture, and surgery.

However, hydrocele as a complication following other procedures is infrequent, with only a handful of cases reported in the literature. Kauer et al<sup>2</sup> reported a case of hydrocele following a laparoscopic cholecystectomy, and this case was treated conservatively. Lantsberg et al<sup>5</sup> reported an infected hydrocele (*Pseudomonas aeruginosa* was isolated from hydrocele fluid) after laparoscopic appendectomy that was treated with evacuation of the fluid from the hydrocele and administration of antibiotics. Figueroa et al<sup>4</sup> also reported an infected communicating hydrocele following laparoscopic surgery for

perforated appendicitis and performed scrotal exploration. The explanation for these complications of laparoscopic surgery was based on the theory that the obliterated processus vaginalis may be reopened by the high intraabdominal pressure from the pneumoperitoneum being maintained throughout the procedure.<sup>2</sup>

A pancreatic hydrocele, which is a rare form of acute scrotum, can occur as a complication of severe acute pancreatitis. Leaking pancreatic fluid can track down the retroperitoneum along the psoas muscle all the way to the scrotum via the inguinal canal and cause testicular necrosis, infection, or autodigestion. Emergent surgical exploration is needed in these cases.<sup>1</sup>

In our case, there was no evidence of an increase in intraabdominal pressure due to the pneumoperitoneum. The most likely mechanism in this case seems to be the presence of an undiagnosed communicating tract along the cord. Bile spillage following gallbladder injury causes peritoneal signs, which can temporarily increase the intraabdominal pressure, and the peritoneal fluid may enter the scrotum through this undiagnosed minimal communicating tract. The mechanism of bile-induced abdominal pain is not fully understood; however, bile salts and bacteria are possible causes of bile-induced abdominal pain.<sup>8</sup> Scrotal swelling and tenderness in this case can also be explained by irritation from the bile fluid. If the patient has recurring symptoms and signs during the follow-up period, inguinal hydrocelectomy should be planned.

### REFERENCES

1. Atiq M, Budhani I, Snyder R, Safdar K, Khan A, Chauhan S. Pancreatic hydrocele: an unusual manifestation of severe

- acute pancreatitis. *Gastrointest Endosc* 2008;68:393-5
2. Kauer W, Brune I, Feussner H, Hartung R, Siewert JR. Hydrocele following laparoscopic cholecystectomy. *Endoscopy* 1993;25:372-3
  3. Lundy J, Hiles J, Paquette E. Bile causing an acute scrotum immediately after laparoscopic cholecystectomy. *JSLs* 2006; 10:379-80
  4. Figueroa AJ, Stein JP, Dunn MD, Skinner DG. An acute scrotum following a laparoscopic appendectomy. *Surg Laparosc Endosc* 1998;8:74-5
  5. Lantsberg L, Mor I, Levy I, Khoda J. Infected hydrocele following laparoscopic appendectomy: case report. *Surg Laparosc Endosc* 1997;7:262
  6. Esposito C, Valla JS, Najmaldin A, Shier F, Mattioli G, Savanelli A, et al. Incidence and management of hydrocele following varicocele surgery in children. *J Urol* 2004;171: 1271-3
  7. Esposito C, Monguzzi GL, Gonzalez-Sabin MA, Rubino R, Montinaro L, Papparella A, et al. Laparoscopic treatment of pediatric varicocele: a multicenter study of the Italian society of video surgery in infancy. *J Urol* 2000;163:1944-6
  8. Lee AD, Abraham DT, Agarwal S, Perakath B. The scrotum in pancreatitis: a case report and literature review. *JOP* 2004; 5:357-9
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