

Duodeno-Cutaneous Fistula following abdominal trauma-report of an unusual case

Samir Ranjan nayak¹, Dilip kumar soren², Ganni bhaskara rao³, M udaya kiran⁴

¹.Associate professor department surgery, GSL medical college Rajahmundry AP india

². associate professor department surgery, GSL medical college Rajahmundry AP india

³ associate professor department surgery, GSL medical college Rajahmundry AP india

⁴.resident , department surgery, GSL medical college Rajahmundry AP india

Abstract: Isolated duodenal injury in abdominal trauma is extremely rare. A diagnosis of isolated duodenal injury may be very difficult to make out in abdominal trauma, even with the availability of Ultrasound and CT scan. Delays in diagnosis due to late clinical presentation, and intra operative dilemmas due to retroperitoneal location of the duodenum, its proximity to important abdominal structures, lead to difficulties in management and considerably increase morbidity and mortality in these patients. We report a case of fall from height with a puncture wound over the right loin presented after 20 hours with pain abdomen. USG abdomen, CT abdomen, DPL show minimal hemoperitoneum which prompted us to do Diagnostic laparoscope. except a small mesenteric injury solid and hollow viscera were found normal, 4 days later patient had greenish discharge from the puncture wound back evaluated and diagnosed as duodeno-cutaneous fistula by contrast and upper GI scope. patient was treated with simple gastrojejunostomy and keeping ryle's tube in afferent loop for decompression of duodenum and feeding jejunostomy for nutrition. Fistula healed and patient was discharged on 11th postop day. A small punctured wound over the back in a trauma abdomen presenting as to duodeno-cutaneous fistula after 96 hours is an unusual presentation.

Key words: Trauma abdomen, duodenal injury,

I. Introduction

Injuries to duodenum in abdominal trauma are relatively rare due to its retro-peritoneal location. Isolated duodenal injury in abdominal trauma are extremely rare and the second part is mostly affected [1]

A pre-operative diagnosis of isolated duodenal injury can be very difficult to make in abdominal trauma, even with the availability of Ultrasound and CT scan. Further there may be a delay in onset of symptoms and a diagnosis is completely missed. Delays in diagnosis due to late clinical presentation, subtle diagnostic findings, and intra operative dilemmas due to retroperitoneal location of the duodenum its proximity to important abdominal structures, its marginal blood supply, lead to difficulties in management and considerably increase morbidity and mortality in these patients [2]

The management of duodenal injuries has long been debated. Because of low frequency of isolated duodenal trauma and high probability of development of morbidity such as fistula formation, sepsis after its repair has made this entity a challenging problem [3]

Mortality and morbidity from duodenal injuries are related to the causative agent, location, presence of associated injuries, and type of surgical repair. However, the interval from injury to operation plays the most significant role in determining the incidence of morbidity and mortality. Lucas and Ledgerwood (2) reported a mortality rate of 40% in patients who were not operated within the first 24 hours after injury, in contrast to a mortality rate of 11% among those patients operated less than 24 hours after the injury. [4]

II. Patient and methods

A 17 year old male daily laborer brought to the emergency department after 20 hrs of history of fall from height. On admission patient had stable vitals. Physical examination revealed mild distension abdomen and tenderness over the right hypochondrium. Examination of back revealed a punctured wound measuring 1x1 cm in the right flank. No evidence of any bleed at punctured wound site. The chest X ray and abdomen x ray was normal study pattern with no gas under diaphragm. Ultrasound and CT abdomen revealed a minimal fluid collection without any solid visceral injury. DPL showed blood stained fluid for which a diagnostic laparoscopy was done. In diagnostic lap liver spleen were normal, a contusion in the mesocolon, Small and large bowel did not show any evidence of injury. A collection of around 300 ml blood found without bowel or bile contamination. A drain was kept and patient shifted to post-op recovery.

On the 4th post-op day during routine examination of the patient, Abdomen was soft, bowel sound present but surprisingly the dressing on the punctured wound site was soaked with greenish discharge. Re evaluated. USG abdomen shows no intraperitoneal collection. Fluoroscopy with oral contrast was done but no contrast was observed coming out of the injury site. MRCP shows normal CBD and pancreatic duct. An upper GI endoscopy was done which revealed a rent in the posterior wall of the second part of the duodenum measuring about 0.5 cm.

Diagnosed as duodenocutaneous fistula at an unusual site probably patient had penetrating injury in the back through the punctured wound site. Patient was taken up for laparotomy, where the pancreatic duodenal area was found edematous, no bile found intraperitoneally. *Gastro-jejunostomy done, one RYLE'S tube kept in afferent loop to decompress duodenum ,another Ryle's tube in the stomach and a feeding jejunostomy done to feed the patient.* During the post-op period leak from the fistula site came down and finally disappeared completely. Feeding through Jejunostomy was started in the 3rd post-op day .Ryle's tube kept in the stomach removed on 5th postop day and oral liquids started on the 7th post-op day. On 11th day Ryle's tube kept in afferent loop for decompressing the duodenum removed, Patient started oral normal diet and discharged on 15th postop day.

III. Discussion

Injury to the duodenum may be either penetrating or non-penetrating. It represents 3- 5 % of all abdominal injury.[4] Isolated duodenal injuries are very rare since they commonly associated with lesions of other abdominal organs ,including major vessels.

The diagnosis is difficult unless a high index of suspicion is maintained; misdiagnosis or diagnostic delay is common, as in the present case:

In case of small duodenal wound, initial physical examination is generally negative. In fact in case of small or retroperitoneal perforations, signs of peritonitis develop once duodenal contents extravasate in the peritoneal cavity, Ultrasound performed initially to rule out injuries to intra-abdominal organs and vessels but it is inadequate to detect lesions in the pancreaticoduodenal area . However, in Some cases even CT scan can be negative at admission, or subtle CT findings such as small amount of unexplained fluid, and unusual bowel morphology, can be Underestimated.[5]

The upper GI Endoscopy is having a diagnostic and therapeutic role in duodeno- utaneous fistula .[6].the site of fistula in this case was diagnosed by upper GI endoscopy only

Repair of duodenal injuries often constitutes a technical challenge, and a variety of special techniques have been described.repair or resection and anasomosis are the preferred method of treatment of duodenal injury.with more complex injury The procedure -- temporary pyloric exclusion and *gastrojejunostomy* to produce "diverticulization" of the duodenum helps in a significant decrease in mortality [7].

In this case the diagnosis of duodenal injury was detected after 4 days of fall from height when patient developed duodenal fistula at a unusual site.Mobilastion and repair of duodenum on laparotomy in a setting of the edematous pancreaticoduodenal region is technicalty difficult task. Hence this simple procedure Gastrojejunostomy, decompression of duodenum by keeping Ryle's tube in afferent loop, with feeding jejunostomy to feed the patient followed.This procedurree decreases morbidity, maintain the nutritional status of the patient and enhance post op recovery



Figure 1-site of injury right loin posteriorly



Figure 2-UGE small rent D2 posteriorly

References

- [1] Pandey S, Niranjana A, Mishra S, Agrawal T, Singhal BM, Prakash A, Attri PC. Retrospective analysis of duodenal injuries: A comprehensive overview. *Saudi J Gastroenterol* 2011;17:142-4
- [2] Allen GS, Morre FA, Coscs Jr, Mhall JR, Duke JH. (1998) Delayed diagnosis of blunt duodenal injury: an avoidable complication. *J Am Coll Surg* Oct;187(4):393-9
- [3] B Bozkurt, B A Ozdemir, B unal, M Dolapci, O Cengiz. (2006) operative approach in traumatic injuries of duodenum. *Acta Chir Belg*; (106):405-8
- [4] Jeong Hee Han, M.D., Sung Il Hong, M.D., Hae Sung Kim, M.D., Byoung Yoon Ryu, M.D., Hong Ki Kim, M.D. Multilevel Duodenal Injury after Blunt Trauma *J Korean Surg Soc* 2009;77:282-286
- [5] Miller LA, Shanmuganathan K. Multidetector CT evaluation of abdominal trauma. *Radiol Clin North Am* 2005;43:1079-95.
- [6] Jennifer K. Lee, M.D.¹ and Sharon L. Stein, M.D. Radiographic and Endoscopic Diagnosis and Treatment of Enterocutaneous Fistulas *Clin Colon Rectal Surg.* 2010 September; 23(3): 149–160.
- [7] R R Ivatury, M nallathambi, J Gaudiano, M Rahman, and w w stahl (1985). penetrating duodenal injuries :analysis of 100 consecutive cases. *Ann Surg* .Aug;202(2):153-8