

## References

1. Kumar P, Clark M. *Clinical medicine*, 7<sup>th</sup> Edition. New York: Saunders Elsevier, 2011.
2. Horsfall C, Ntusi A. Severe disseminated hydatid disease successfully treated medically with prolonged administration of albendazole. *Oxford Medical Journal*, 2008 (101):745-746.
3. Douglas R, Mandell G, Bennet J. *Principles and practice of infectious diseases*. Vol 2, 4<sup>th</sup> Edition. Philadelphia: Churchill Livingstone, 1995.
4. Dandan I. Hydatid cysts. [emedicine.medscape.com/article/178648-overview](http://emedicine.medscape.com/article/178648-overview) (Updated 28/11/2011).
5. Pedrosa I, Saiz A, Arrazola J, Ferreiros J, Pedrosa C. Hydatid disease: radiologic and pathologic features and complications. 2000. [radiographics.rnsa.org/content/20/3/795.full](http://radiographics.rnsa.org/content/20/3/795.full) (Date accessed 24/06/2012).
6. Brunetti E. Echinococcosis hydatid cysts. [emedicine.medscape.com/article/178648-overview](http://emedicine.medscape.com/article/178648-overview) (Updated 19/10/2011).

## peer reviewed CASE REPORT

# Case report: Intramural hematoma of the duodenum as a complication of an ERCP

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### Abstract

An intramural hematoma is a hematoma in the wall of a structure, such as bowel or bladder, usually resulting from trauma. The most common complications of an endoscopic retrograde cholangiopancreatography (ERCP) are acute pancreatitis, bowel perforation and bleeding. The patient's clinical history, radiological findings, the epidemiology and treatment options for an intramural hematoma of the duodenum are discussed in this case report.

### Keywords

Gastric obstruction, pancreatitis, pseudo cyst of pancreas, common bile duct, stent, computed tomography.

### Case report

A middle age male was admitted to the casualty department of a private hospital with right sided pain and a history of nausea and vomiting for a week. Clinical examination revealed tenderness over the right upper quadrant. An ultrasound scan demonstrated a dilated common bile duct (CBD) and a cystic lesion in the head of the pancreas. This examination was followed by an abdominal computed tomography (CT) scan. The findings were a 4.5cm pancreatic pseudo cyst that caused extraneous compression of both the pancreatic and common bile ducts which resulted in the dilatation of the pancreatic and common bile ducts proximally as well as the intrahepatic ducts.

An endoscopic retrograde cholangiopancreatography (ERCP) was performed eight days later. The results demonstrated a tight stricture proximal of the ampulla of Vater which resulted in dilation of the CBD. A 1cm papillectomy was performed and a 7cm 10 French stent was inserted across the biliary stricture. Cytology was obtained of the common bile duct as well as the ampulla. Cytology from the ERCP revealed no malignant cells.

Two days later the patient presented

with signs of recurrent pancreatitis. He was hyperamylasemic with an amylase level of 560 about 24 hours later. According to literature, serum amylase levels are raised in at least 75% of patients with pancreatitis<sup>[1]</sup>. Based on his clinical signs of pancreatitis a second CT scan of the abdomen was undertaken. This demonstrated the stomach filled with oral contrast and fluid (Figure 1). There was an outflow obstruction. The duodenum was large and sausage shaped (Figure 2). No oral contrast was noted in the small bowel. This was in keeping with hematoma of the wall of the duodenum with compression of the lumen of the duodenum. Air lucencies were noted in relation to the biliary tract and there was a stent in situ in relation to the common bile duct (Figure 3). There was a pseudo cyst of the head of the pancreas measuring 5.5cm in diameter and accompanying dilation of the pancreatic duct.

After the CT scan he was admitted to ICU and the next day he underwent a gastroscopy which demonstrated a large swelling in the duodenum (Figure 4). The surgeon was able to manipulate the scope past the hematoma but failed to place a nasogastric tube. The patient was kept nil

per mouth (NPO) and treated conservatively. Ten days later a further gastroscopy was performed. The pylorus was still very swollen. Although the duodenum was still severely swollen, it was less haemorrhagic. A nasogastric tube was then inserted in order to feed the patient and was removed nine days later since he was able to eat without nausea and vomiting. He was discharged two days later and was scheduled to return for follow up examinations within four weeks<sup>[4]</sup>. An ultrasound four weeks later revealed a resolving pseudo cyst with no evidence of the intramural duodenal hematoma.

### Discussion

An intramural hematoma is a hematoma in the wall of a structure, such as bowel or bladder, usually resulting from trauma or excessive anticoagulation<sup>[2]</sup>. The most common complications of an endoscopic retrograde cholangiopancreatography (ERCP) are acute pancreatitis, bowel perforation and bleeding<sup>[3]</sup>. The complication rate is very low, about 5.6% but the rate almost doubles to 9.8% if the patient had a sphincterotomy. Patients undergoing sphincterotomy also tend to present with duodenal haemorrhage. The bleeding is usually intraluminal, but a few intramural

hematomas have been reported. Typically CT is not performed for diagnosis of a haemorrhage but it might be an incidental finding when scanned for another reason<sup>[3]</sup>. This patient was one of the almost 10% that had duodenal haemorrhage after a sphincterotomy and he was one of a few in which the bleeding was intramural.

Haemorrhage can be intraluminal or intramural. Unless haemorrhage is very severe intraluminal bleeding does usually not have significant complications. On the other hand intramural haemorrhage leads to an accumulation of blood in the intramural space, resulting in a he-

matoma. The hematoma could form an intraluminal bulge that causes duodenal obstruction. It could also constrict adjacent structures<sup>[5]</sup>. The duodenum is a retroperitoneal structure with the exception of the duodenal bulb which lies inside the anterior para renal space and is a 30cm C-loop sector of the gastro-intestinal tract that extends in the retroperitoneum from the pylorus of the stomach to the ligament of Treitz<sup>[6]</sup>. Patients with intramural duodenal hematoma usually present with diffuse abdominal pain and heavy vomiting at some stage<sup>[5,7,8]</sup>. Symptoms can start within two hours after the incident or sur-

face after a few days<sup>[8]</sup>. The most valuable imaging modalities are CT, ultrasound and barium meal<sup>[5,8]</sup>. Contrast enhanced CT would be the modality of choice since it allows imaging of the hematoma as well as ruling out any perforation<sup>[5]</sup>. The appearance of an intramural hematoma on CT is a heterogeneous, hyper dense mass in relation to the second to fourth segment of the duodenum<sup>[9]</sup>. An intramural duodenal hematoma is a rare complication either after trauma or iatrogenic to examinations such as ERCP. An intramural hematoma is most commonly seen in children after blunt ab-

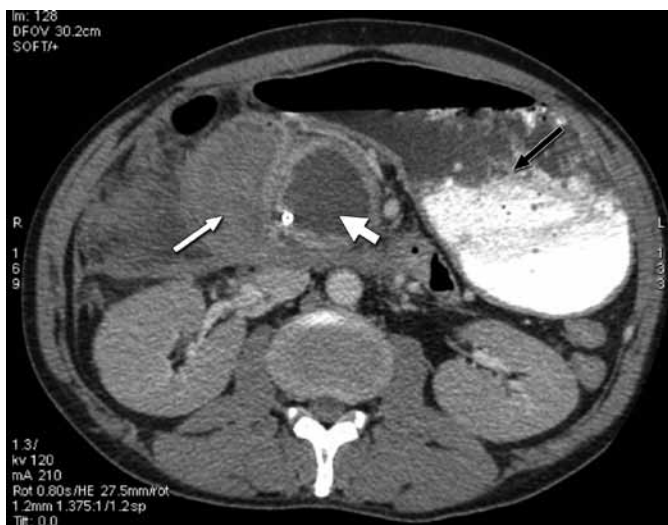


Figure 1: Axial CT image of the abdomen demonstrating a large sausage shaped duodenum with intramural hematoma (thin white arrow) with pseudo cyst in pancreas (short, thick white arrow). The black arrow represents stomach filled with contrast media.

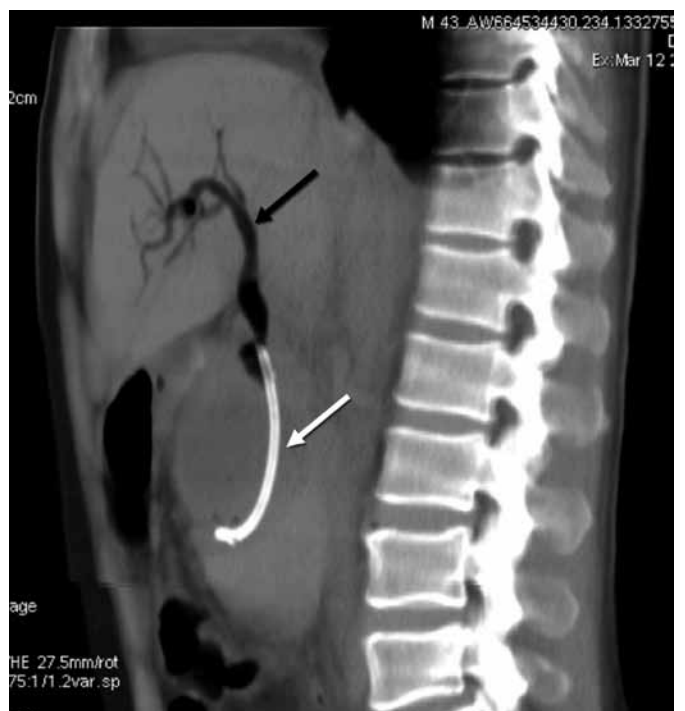


Figure 3: Sagittal CT image of the abdomen demonstrating biliary tree filled with air (black arrow) and stent in situ in common bile duct (white arrow).



Figure 2: (a) Coronal CT of the abdomen demonstrating the large sausage shaped duodenum with intramural hematoma, and (b) pseudo cyst of pancreas. (c) Also note air in biliary system. (d) The inserted stent. (e) The stomach filled with contrast media.

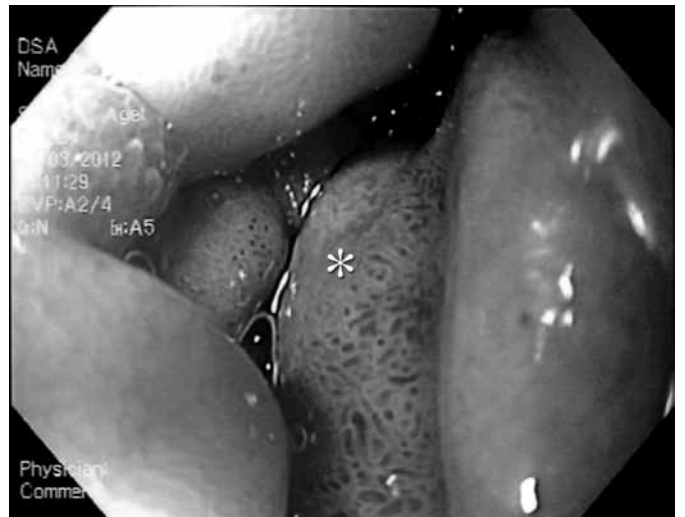


Figure 4: ERCP image showing large intramural hematoma of the duodenum (asterix).

dominal trauma and accounts for 70% of intramural duodenal hematomas in them. It is also linked to pancreatitis, and can happen spontaneously with the use of anticoagulation or bleeding diathesis, and can be a complication of endoscopic biopsy<sup>[5,8,9]</sup>.

The patient's age contributed to him being in the lower percentile range for intramural hematomas. Patients with an intraluminal hematoma usually have a good prognosis as they mostly resolve spontaneously with conservative treatment. Nev-

ertheless if the hematoma does not resolve with conservative treatment surgical intervention might be required<sup>[7]</sup>. Conservative treatment is the preferred method of treatment for an intramural hematoma. Such treatment could consist of intravenous fluids, nasogastric tube decompression, total parenteral nutrition, symptomatic medication and careful observation<sup>[5,7]</sup>. The hematoma could also be evacuated, either surgically or by ultrasound or CT-guided aspiration or endoscopic balloon dilatation or endoscopic incision and drainage

of the hematoma<sup>[10]</sup>.

### Conclusion

An intramural hematoma in the duodenum is a very rare complication most commonly found in children after blunt trauma but the patient in this case report was an adult. He developed an intramural duodenal hematoma as a complication of an ERCP. CT imaging played an important role in the diagnosis and subsequent management of this rare intramural duodenal hematoma.

### References

1. Mathew A. Hyperamylasemia. Available at: <http://emedicine.medscape.com/article/186389-overview#showall> [April 13, 2012].
2. Intramural Hematoma - Medical Definition. *Stedman's Medical Dictionary*. Available: <http://www.medilexicon.com/medicaldictionary.php?t=39807> [May 13, 2012].
3. Pannu HK, Fishman EK. Complications of endoscopic retrograde cholangiopancreatography: spectrum of abnormalities demonstrated with CT. *RadioGraphics*, 2001, Vol 21:1441.
4. Lacey CS. General surgeon: personal Interview 3 April 2012 at The Bay Hospital, Richards Bay: South Africa.
5. Diniz-Santos DR, De Andrade Cairo RC, Braga, H, Araujo-Neto C, Paes IB, Silva LR. Duodenal hematoma following endoscopic duodenal biopsy: A case report and review of the literature. *The Canadian Journal of Gastroenterology*, 2006, Vol 20(1): 39.
6. Zissin R, Osadchy A, Gayer G, Shapiro-Feinberg M. CT of duodenal 1 pathology. *BJR*, January 2002 (75):78.
7. Kwon C, Hyun Ko K, Kim HY, Hong SP, Hwang SG, Park PW, Rim KS. Bowel obstruction caused by an intramural duodenal hematoma: a case report of endoscopic incision and drainage. *Journal of Korean Medical Science*, 2009 (24):179.
8. Luchtman M, Steiner T, Faierman T, Breitgand A, Bartal G. Post-traumatic intramural duodenal hematoma in children. *Israel Medical Association Journal*, 2006, 8 (February):95.
9. Gullotto C, Paulson EK. 2005. CT-guided percutaneous drainage of a duodenal hematoma. *AJR*, 2005 January (184):231-233.
10. Jung PM, Won M, Ja PS, In PM, La JL, Sik JG. Large duodenal hematoma associated with transcatheter arterial embolization following endoscopic hemostasis in a cirrhosis patient: case report. *The Turkish Journal of Gastroenterology*, 2011, Vol 22(6):612.

## peer reviewed CASE REPORT

### Case report: Superficial femoral artery aneurysm accompanied by DVT

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#### Abstract

This case report describes a middle aged male patient in his early 50s who presented with a swollen left leg and various non-specific clinical signs. Following a range of investigations he was diagnosed with superficial femoral artery pseudo aneurysm (SFAA) and DVT (deep vein thrombosis). His treatment and aetiology of this condition are presented.

#### Keywords

MDCT, CTA peripheral, HAART, HIV

#### Case report

A middle aged male was referred from a rural hospital with a differential diagnosis of a left thigh Kaposi sarcoma. On examination he had a hard pulsating mass on the medial aspect of the left thigh and swelling of the whole leg with pitting oedema. He was wasted, afebrile and chronically ill looking. A fine needle aspiration (FNA) of the mass was sent for histology. Blood test and protein studies were done; he was referred for voluntary counselling and

testing (VCT). An urgent ultrasound was requested which demonstrated a large superficial femoral aneurysm (SFA) and DVT (deep vein thrombosis). He then underwent a multi-detector computed tomography (MDCT) angiogram. The volume rendered image with a 3D perspective revealed a large left SFA pseudo-aneurysm (Figure 1). There was no evidence of bone destruction or oedema of the left thigh. There was evidence of collateral vessels which is indicative of a chronic state. An axial image showed a large throm-

bus around the aneurysm (Figure 2). The haematoma around the mass lesion was enhancing and the small round structures originated from the big haematoma (Figure 3). There was evidence of a DVT in the popliteal vein as the veins were occluded as a result of the haematoma (Figure 4).

SFA pseudo aneurysm is a rare type and usually occurs in elderly patients and is also described as a complication of acquired immunodeficiency syndrome (AIDS). The VCT results were positive and the patient had a CD4 count of 6. He was