International Journal of Surgery Case Reports 94 (2022) 107044

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.elsevier.com/locate/ijscr

Case report

Solid pseudopapillary neoplasm of pancreas presenting after bicycle handlebar injury: diagnostic pitfalls in a young female-A case report☆

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ARTICLE INFO

Keywords:
Solid pseudopapillary neoplasm
Frantz's tumour
Handlebar injury
SPN

ABSTRACT

Introduction and importance: Solid pseudopapillary neoplasm (SPN) of pancreas is a rare neoplasm with very low malignant potential. It mainly affects females in third decade of life and has favourable prognosis.
Case presentation: We report a case where a 17-years old girl presented with history of blunt abdominal trauma with handlebar of bicycle 6 months back, following which she developed abdominal pain and fullness in epigastrium. Keeping pancreatic pseudocyst as provisional diagnosis, she was investigated. The final diagnosis of SPN of pancreas came as a surprise.
The mass, about 6x5cm, was excised and Roux-en-Y distal pancreatico-jejunostomy was done.
Clinical discussion: Patient showed no recurrence or metastasis till one year of follow-up. This is the first case report of SPN presenting after handlebar injury.
Conclusion: Timely and adequate resection provides good long-term survival.

1. Introduction and importance

Solid pseudopapillary neoplasm (SPN) of pancreas, also known as Frantz's tumour, is a rare malignancy, characterized by a well capsulated tumour. It mainly affects females in their third decade of life and has a favourable prognosis [1]. It constitutes 2% to 3% of all pancreatic neoplasms and 0.9% to 2.7% of all exocrine pancreatic neoplasms [2]. The tumour has 10%–15% incidence of distant metastasis with a low mortality rate of 2% [3]. Here, we report a case of SPN which presented following blunt abdominal trauma with the handle of a bicycle.

2. Case report

A 17-year-old female presented with history of handlebar injury 6 months back, following which she started having left upper quadrant abdominal pain radiating to back off & on with fullness in epigastrium. On examination, about 10 × 10 cm lump was present in epigastric, left hypochondrium and upper umbilical region. Serum amylase and lipase levels were raised. Suspecting old pancreatic injury, a provisional diagnosis of pancreatic pseudocyst was made. On Contrast Enhanced Computed Tomography (CECT), there was a large well-marginated thick-walled cystic mass of size 6.4 × 4.8 cm, with internal inhomogeneity and enhancing non-dependent component in head and neck of pancreas. The findings were suggestive of either a complex pancreatic pseudocyst or a cystic neoplasm of pancreas (Fig. 1). CEA and CA-19-9 levels were normal. To reach a diagnosis, ultrasound-guided fine-needle aspiration cytology (FNAC) was done, and it was suggestive of SPN. Surgical resection was planned and, patient was immunized as splenectomy was anticipated. On exploration, a large mass about 6 × 5 cm was found, involving mainly the neck and part of head of pancreas. Central pancreatectomy removing part of head and neck of pancreas with Roux-en-Y distal pancreatico-jejunostomy and jejuno-jejunostomy were done by us (Fig. 2). Post operative period was uneventful and patient was discharged on 9th post operative day. The histo-pathological examination findings were consistent with the diagnosis of SPN of pancreas.

3. Clinical discussion

Pancreatic injuries are rare in blunt abdominal trauma (0.6%) and can easily be missed. In contrast, bicycle handlebar injury is the most common cause of pancreatic trauma in children and adolescents [4]. A missed pancreatic injury with partial ductal disruption may present late with an abdominal lump due to formation of pancreatic pseudocyst. In

☆ The work has been reported in line with the SCARE 2020 criteria.

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https://doi.org/10.1016/j.ijscr.2022.107044
Received 4 January 2022; Received in revised form 1 April 2022; Accepted 3 April 2022
Available online 5 April 2022

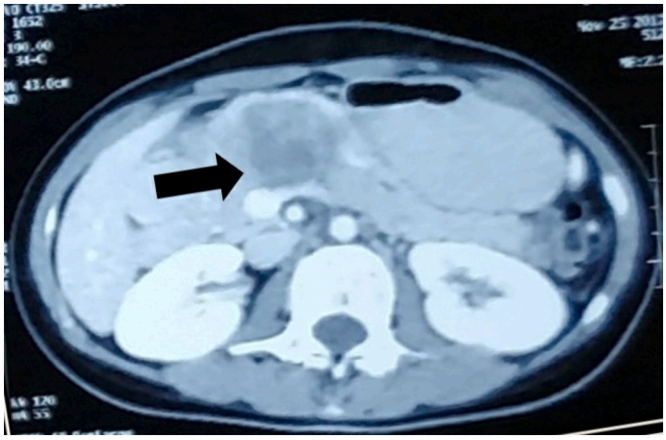

Fig. 1. Arrow shows solid-cystic mass in pancreas.

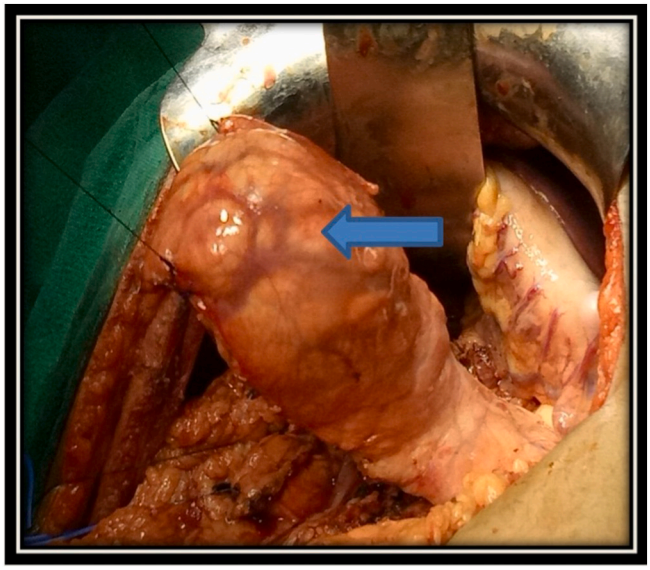

Fig. 2. Mass in pancreas involving part of head and body.

our case, patient had a history of trauma with bicycle handle bar, and she developed abdominal pain following trauma. An upper abdominal mass, along with increased serum amylase and lipase, led us to the clinical diagnosis of pancreatic pseudocyst. Subsequently, it was the CECT abdomen followed by ultrasound-guided FNAC, which guided us to the final diagnosis of SPN. It came as a surprise, as SPN of pancreas, though reported after blunt abdominal trauma, has never been reported after handlebar injury in literature [5].

More than 90% of SPNs have predilection for middle aged women and female to male ratio is reported to be around 20:1 [3]. Defying the norms, cases have been reported ranging from 5 year old female to 73 year old male [6–8].

The common sites of tumour include pancreatic tail and the head, followed by the pancreatic body [3]. In almost 30% of the cases, patients are asymptomatic. The most common symptoms associated are abdominal pain and abdominal distension, along with features of gastric outlet obstruction due to pressure effect [1,3,6].

Solid pseudopapillary neoplasm can be detected by ultrasonography, CECT abdomen, and magnetic resonance imaging. Endoscopic ultrasound guided FNAC is the standard procedure for pancreatic lesions and a better modality to obtain preoperative diagnosis for solid and cystic pancreatic pathologies [2].

Surgical resection remain the treatment of choice for these tumours and depending on the location of the neoplasm, the type of pancreatectomy is decided, ranging from central pancreatectomy with splenectomy to distal pancreatectomy with splenectomy to Whipple's operation along with portal vein resection [3].

The histo-pathological features of SPN vary from solid to cystic components with cellular degenerative changes. They are characteristically positive for α1-antitrypsin, CD56, CD10, and vimentin [1,7].

Malignant transformation has been seen in about 15% of cases, manifesting as metastases or invasion of adjacent structures. Most common metastatic sites reported are liver & omentum. Despite local aggressiveness, it has a favourable prognosis, even in the presence of metastasis and surgery remains the mainstay of treatment. Overall 5-year survival is as high as 97% in patients undergoing surgical resection only [1].

4. Conclusion and learning points

To our knowledge, this is the first reported case of SPN which presented following handlebar injury. A high index of suspicion should be kept for SPN in patients presenting late after BTA.

Depending on the location of tumour, conservative resection of SPN is feasible and it provides good long-term survival.

The work done has been reported in line with the SCARE 2020 criteria [9].

Provenance and peer review

Not commissioned, externally peer-reviewed.

Consent

Obtained.

Ethical approval

NA.

Funding

None.

Guarantor

Dr. Krishnanand Anand.

Research registration number

NA.

CRediT authorship contribution statement

Dr. Krishnanand Anand - Study concept, design and interpretation
Dr. Shehtaj Khan - Study concept, design, data analysis and interpretation
Dr. Amit Tiwari - Data collection, paper writing and interpretation.

Declaration of competing interest

The authors declare that there is no conflict of interest.

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