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MANAGEMENT OF TRAUMATIC PANCREATITIS IN A TERTIARY CARE CENTRE – A PROSPECTIVE STUDY

Gastroenterology

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ABSTRACT

Introduction : The subtle signs and reports in in the early post traumatic time delays the treatment for post traumatic pancreatitis . Where the morbidity and mortality rates are significantly high. This study from our institution is about the management of 25 cases of post traumatic pancreatitis in our institution.

Materials and methods : 25 patients who were managed for post traumatic pancreatitis in our institution between August 2015 and April 2018 were studied .Demographic and Clinical data , lab investigations , mode of injury , imaging findings and the management were recorded and analysed.

Results : 17 patients were males and 8 were females with mean age of 31.

7 had penetrating injuries and 18 had blunt injury .

Among the 18 who had blunt injury 11 followed an automobile accident, 4 had a classical cycle bar injury and 3 had presented with injury after an assault.

16 patients were managed surgically mainly because of bad hemodynamic status and associated injuries of other organs.

9 patients underwent ERCP . 6 had pancreatic ductal disruption and were stented for the other 3 sphincterotomy and conservative management was done .

Conclusion : Management of post traumatic pancreatitis is by a multi disciplinary team led by a medical or a surgical gastroenterologist.

ERCP is a very effective minimally invasive means of diagnosing and treating this condition.

KEYWORDS

INTRODUCTION:

Pancreas is injured in approximately 3% to12% of all penetrating or blunt abdominal trauma and the mortality rate ranges between 3 % to 70% for the same [1–3] .Off late there has been an increase in the incidence of traumatic pancreatitis because of the use of seat belts which increases the rate of deceleration injury and increased penetrating trauma [1–5]. Most of the time there would be a delay in diagnosis because of the subtle physical signs and laboratory investigations and imaging findings in the immediate post trauma period [5-8]. That results in complications such as hemorrhagic pancreatitis, pseudocyst and intra abdominal abscess formation[9]. Main reason for the incidence of post traumatic pancreatitis is injury to the main pancreatic duct or its side branches. Even though pancreatography is the most precise modality by which ductal injury can be delineated it is seldom used because of the difficulties to perform it on an emergent basis and lack of sufficient expertise. 25 patients who underwent management of post traumatic pancreatitis in our hospital in the past 3 years are presented in the study.

MATERIALS AND METHODS :

We prospectively studied 25 patients who underwent management for pancreatic duct injury at the Madras Medical College, between August 2015 and April 2018. Demographic data , Laboratory investigations ,mechanism of injury , imaging details (CECT /MRCP) , details of surgery or ERCP were recorded for all patients. For patients who were hemodynamically stable a base line imaging – USG or CECT or MRCP was used to document the pancreatic injury and in patients who were hemodynamically unstable intra operative findings which suggested pancreatic injury were documented. The injury was classified according to the American association for surgery of trauma guidelines

American Association for Surgery of Trauma (AAST) - Classification of traumatic injury of the pancreas [10]

(I) Grade 1: Minor contusion without ductal injury

(II) Grade 2: Major contusion/laceration without ductal injury or tissue loss

(III) Grade 3: Distal transection or parenchymal injury with ductal injury

(IV) Grade 4: Proximal transection or parenchymal injury involving ampulla

(V) Grade 5: Mass destruction of the pancreatic head.

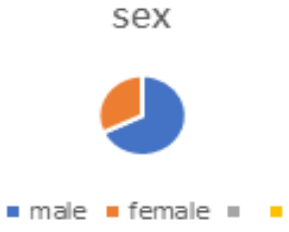
STATISTICALANALYSIS :

Predominantly descriptive statistics were used in view of the non-homogenous nature of the patient population. Qualitative variables were expressed as a percentage while the Mean+/- standard deviation was used for the quantitative ones.

RESULTS :

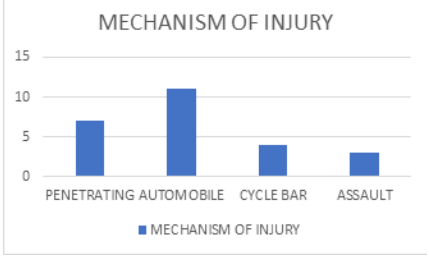
BASELINE CHARACTERISTICS :

17 were males (68%) and 8 were females (32%). Age of the patients varied between 9 and 63 with a median of 31.



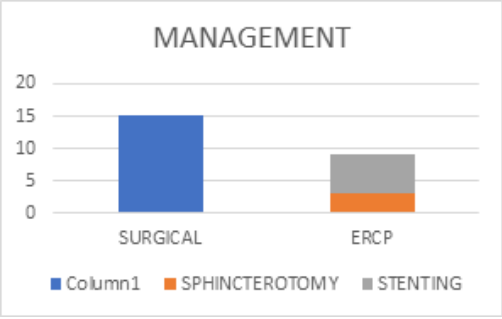
MECHANISMS OF INJURY :

Out of 25 patients 7 had penetrating injury of abdomen. Among the rest 18 who had blunt trauma 11 had automobile accidents 4 had the classical cycle bar injury and 3 developed post traumatic pancreatitis secondary to assault.



MANAGEMENT :

The main factors that mandated surgical management were worsening hemodynamic status and associated injuries of other organs.16 patients were managed surgically. ERCP was done in all 9 patients who did not require surgical management . 3 patients did not have any significant injury of the pancreatic duct and were managed with sphincterotomy and conservative management. The other 6 had significant injury of the pancreatic duct and pancreatic stenting was done for them.



DISCUSSION :

The fixed retroperitoneal location of pancreas which lies over the lumbar spine makes it particularly vulnerable to pancreatic ductal disruption with deceleration injuries of the upper abdomen. 1 Significant post traumatic pancreatitis happens due to extravasation of the pancreatic juice into the gland and / or retroperitoneum from the disrupted pancreatic duct [9]. A multidetector CT with 0.6mm to 2.5 mm sections through the pancreas with pancreatic protocol provide superb visualisation of the pancreas .However in the 24 hr CT done for abdominal trauma the inflammatory changes incited by the pancreatic secretions can be minimal or absent. A delay in diagnosis means delay in treatment which in turn implies a significant increase in morbidity and mortality.

Because of the logistical anatomical and technical difficulties it is often perceived that ERCP is impossible in an acutely traumatised patient[8-9]. The prone position which is warranted for ERCP is difficult in a post traumatic patient unless general anaesthesia is given. There may be an associated duodenal injury which causes oedematous distortion of the papilla which might further complicate the visualisation with a side viewing scope. However ERCP + contrast study provides us a clear idea of the pancreatic duct anatomy and the extent of injury if any and management of the same. As an added advantage any occult biliary injury can be diagnosed and possibly treated.

Endoscopic therapy may alleviate the need for a major surgery in selected cases of pancreatic ductal disruption as in 6/25 of our patients (24%). The pancreatic duct sphincter pressure is normally 30 to 40 mm of Hg higher than the duodenal intraluminal pressure and in a case of Pancreatic ductal transection the flow of the pancreatic juice will be into the retroperitoneum or peritoneum increasing the inflammatory sequelae however endoscopic management in the form of sphincterotomy with / without PD stenting will tackle the problem effectively.

CONCLUSION :

The optimal management of a case of post traumatic pancreatitis is by a multi disciplinary team led by a medical or a surgical gastroenterologist coordinating with his radiology and anaesthesia colleagues.

ERCP is a minimally invasive technique with a definitive diagnostic and therapeutic yield for selected patients in centres which have sufficient expertise.

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