

when the cystic mass was in the left hypochondrium. The barium enema showed forward displacement of descending colon and splenic flexure in the lateral view. I.V.P. was normal.

An exploratory laparotomy was performed in all pa-

tients. The location of the cysts is given in the Table. Two of the cysts were thin walled and external tube drainage was carried out. One of the cysts in the region of the tail was loculated, and the septa had to be broken down with the finger to make intracystic communications prior to cysto-gastrostomy.

Table: Clinical and operative data

NO. OF PATIENT	AGE	SEX	ETIOLOGICAL FACTOR	LOCATION OF CYST.	PROCEDURE
1.	5 Yrs.	M	Post-traumatic	Head	External drainage.
2.	7 "	F	Inflammatory	Body	Cystogastrostomy.
3.	6 "	M	Post-traumatic	Body	Cystogastrostomy.
4.	4 "	M	Inflammatory	Body	Cystogastrostomy.
5.	8 "	M	Post-traumatic	Tail	Aspiration+External drainage.
6.	9 "	M	Post-traumatic	Body	Aspiration+Cystogastrostomy.
7.	12 "	M	Post-traumatic	Head	Cysto-cystostomy+Cystogastrostomy.

Percutaneous aspiration and drainage was carried out in two cases but the cysts recurred in both cases within two weeks, necessitating exploration. In first case the cyst was thin walled and was drained externally. In the second case the cyst was thick walled and a cysto-gastrostomy was done.

Post-operative recovery was uneventful in all the cases. No complications were recorded during the follow up period of 6 months to a year.

#### DISCUSSION:

A pseudopancreatic cyst is a gradually enlarging cystic mass which lacks an epithelial lining and follows the path of least resistance. Usually it is retrogastric causing antero-superior displacement of the stomach. It may extend through the gastrocolic omentum between the leaves of the transverse mesocolon or may point in one of the paracolic gutters.

Pseudopancreatic cyst in children are uncommon. Kilman<sup>4</sup> reviewed 34 cases of pseudopancreatic cyst in children reported in the literature between 1909 and 1969. With ultrasonography and CT scanning, pseudopancreatic cysts are likely to be diagnosed more frequently. In Bonglovi and Logosso<sup>5</sup> series 50% of 34 cases were post-traumatic. Children are more prone to impingement of epigastrium from a direct hit while palying, fighting or as a result of road traffic accidents. Graham Fraser<sup>6</sup> describes this as a poking force applied to a small area of the upper abdomen driving the abdominal wall posteriorly and causing a lateral displacement of the mobile viscera, until the relatively fixed pancreas is trapped and crushed in between the indriven projection and the spinal column. Contusion of the pancreas with initial inflammation and some haematoma formation usually occurs, followed by the formation of a pseudocyst.

With the exception of the mass, other clinical findings

## Pseudopancreatic Cyst in Children and its Management: 5 Years Experience at National Institute of Child Health J.P.M.C. Karachi.

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### ABSTRACT:

During the period 1980-84 seven children between 4 and 12 years of age underwent surgery for Pseudopancreatic cyst at the National Institute of Child Health (NICH). The cysts were post-traumatic in five children and post-inflammatory in two. Cystogastrostomy in 5 patients and external tube drainage in two patients were successfully carried out and there were no complications. An initial attempt at aspiration in 2 cases resulted in cyst recurrence.

### INTRODUCTION:

A pancreatic pseudocyst is a cystic structure located primarily in the lesser sac. The wall is composed of granulation tissue in varying stages of maturity and the lining is devoid of epithelium. Its boundaries are determined by the organs that outline the lesser sac cavity. It may or may not communicate with the pancreatic duct system. When it does, amylase levels in excess of 3000 units are common.

There is prevalence of traumatic pancreatitis in childhood which, in 20% of cases, results in pancreatic pseudocyst<sup>1</sup>. Cooney and Grosfeld<sup>2</sup> reviewed literature upto 1975 and found 60 well documented paediatric cases adding 15 to it. Reports of pancreatic pseudocysts due to trauma in childhood, and, to a lesser degree, following idiopathic pancreatitis, are increasing. Dennen<sup>3</sup> in 1922 was the first to recognise the role of trauma in pancrea-

titis. Uptil 1979, 93 cases of pancreatic pseudocysts have been reported.

### PATIENTS PROFILE:

Seven children between 4-12 years of age (mean age 7.28 years) were operated upon for pseudopancreatic cysts during the period 1980-84 at NICH, Karachi. Data including age, sex, etiology, operative findings and procedures are shown in the Table. Abdominal mass was the main presenting complaint in all, followed by pain, nausea, loss of appetite and loss of weight. Only one patient had been admitted to a hospital following blunt abdominal trauma. All others had been treated at home by general practitioners or non-physicians. The mean interval between trauma and presentation was 3 month.

Five out of 7 cases gave the history of blunt abdominal trauma; two of these were involved in road traffic accidents, two had fallen from a height, and one had received a blow during a fight.

One patient gave a history of mumps months ago, while one other patient had a febrile illness associated with abdominal pain and vomiting months previously.

Diagnosis was based on clinical history, physical findings, radiological and ultrasonographic investigations. An upper abdominal series with barium contrast x-rays showed an anterior displacement of stomach in three cases, and widening of C-loop of the duodenum in two cases. Ultrasonography done in four cases accurately demonstrated the site and size of the cyst. Plain x-ray of the abdomen done routinely did not show calcification. A barium enema and I.V.P. were also done in one case

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like pain, anorexia, nausea and vomiting are nonspecific. Diagnosis may be confirmed by ultrasonography the diagnostic accuracy of which is 90%<sup>7,8</sup>. The accuracy of CT scan is similar<sup>9</sup>.

Upper gastrointestinal barium contrast studies are useful in the case of larger cysts, but not for the smaller ones. This procedure does not distinguish between cystic and solid masses.

Superior mesenteric and coeliac angiography have also been used as diagnostic procedures. Fray<sup>10</sup> has recommended this procedure in order to differentiate between a pseudopancreatic cyst and a pseudoaneurysms, the latter however, are rare in children.

Management, agreed by all, is operative. But the trend now a days of conservation is emphasised. Bradley and Clements<sup>7,8</sup> recommend a wait and see policy; claiming that pancreatic pseudocysts often resolve spontaneously. However, peripancreatic oedema may be mistakenly diagnosed as a pseudocyst<sup>7,8</sup>.

Windle, et. al<sup>11,8</sup>, recommend needle aspiration of pseudopancreatic cysts in children. Mujib<sup>12</sup> has described successful percutaneous needle drainage of cysts. Needle aspiration failed in our two cases. It is likely that thickness of the cyst wall determines the result in this form of treatment.

Amongst the operative procedures, external drainage for immature cysts gives good results. Boggs<sup>9</sup> recommends external drainage in infected cysts also.

Cystogastrostomy, cystoduodenostomy and cystjejunostomy have been used as internal drainage procedures.

Haemorrhage from the anastomotic line may occur in 38% cases. Cysts recur in 8–10% of cases<sup>13</sup>. We have not had complications in our small series.

Excision of the cyst with partial pancreatectomy has also been mentioned as a type of treatment.

Luckily we have not met any post-operative immediate or late complication so far

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