ment survived, while only two infants without such therapy have survived so far(3). Prolonged mechanical ventilation in the hope of spontaneous recovery itself may be harmful causing airway and lung complications(8), as in the index case. Hence, early surgical intervention is recommended in all symptomatic cases.

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Ultrasound Guided Percutaneous Drainage of Pancreatic Pseudocysts

Manju Bala Popli
Rama Anand
R. Mahajan
Navin Jain
D.P. Garg

Pancreatic pseudocysts are localized collection of pancreatic secretions in a cystic structure that lacks an epithelial lining, and accumulates in necrotic portion of pancreas or in the lesser sac. Pseudocysts of pancreas are uncommon lesions in infancy and childhood(1,2). Spontaneous resolution of pseudocysts occurs in 20-25% cases(3), the rest however, require intervention. Surgery used to be the only option available for many years, but with advances in imaging modalities it has been possible to carry out simple interventional procedures like percutaneous drainage, which are very effective, have a low complication rate, decrease

From the Departments of Radiology and Pediatric Surgery, Lady Hardinge Medical College and Associated Hospitals, New Delhi 110 001.

Reprint requests: Dr. Manju Bala Popli, Department of Radiology, Lady Hardinge Medical College, New Delhi 110 001.

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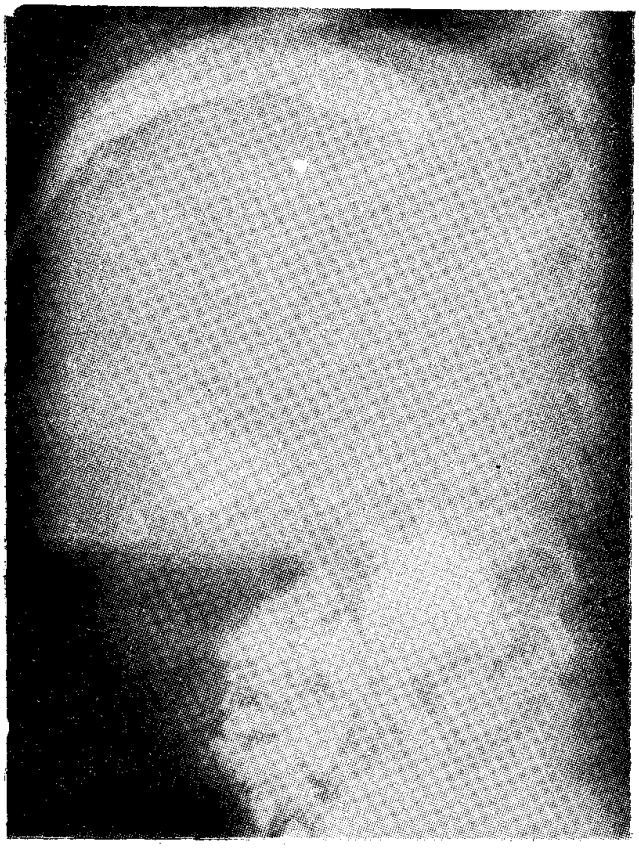

Fig. 1. Barium meal (Lateral view) showing anterior and upwards displacement of stomach, bowel loops downwards into pelvis.

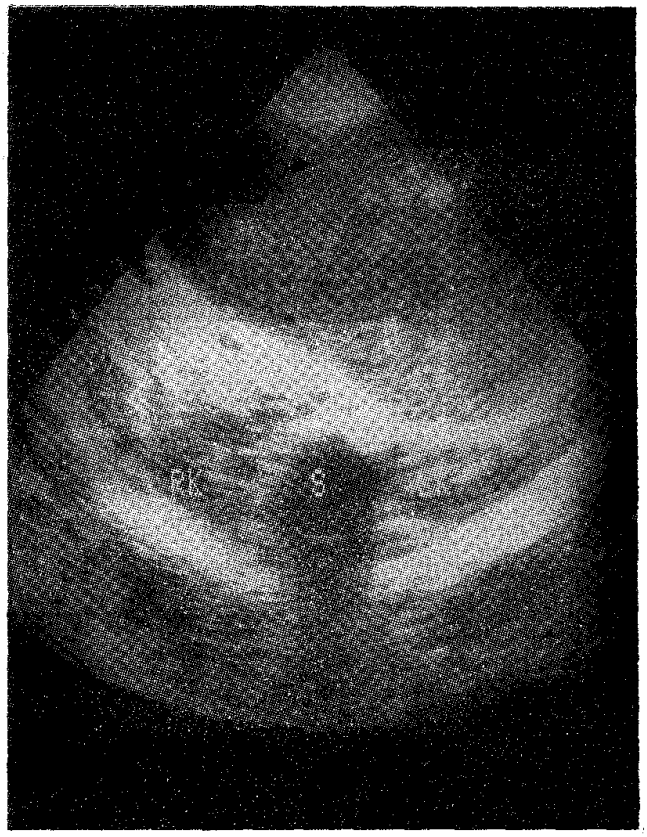

Fig. 2a. Ultrasound abdomen, transverse scan showing a large cystic mass: Pseudocyst of pancreas - M, Right Kidney - RK, Left Kidney - LK, Spine - S, Liver - Liv.

the patient's stay in hospital and avoid trauma and complications of major surgery. In this communication we report our successful experience of managing two cases of pseudocysts of pancreas with this simple technique.

Case Reports

Case 1 : A 2-year-old girl was admitted with complaint of having being stamped over abdomen by a cow one month back. The clinical and investigative details are outlined in *Table I*. A provisional diagnosis, consistent with clinical findings of collection in lesser sac was made. Abdominal ultrasonography confirmed these findings (*Fig. 2a*). The collection was externally drained with the help of a thoracic catheter of 20 FG under local anesthesia. The catheter was transfixed to the skin and attached to a plastic collection bag. About 1800 ml of fluid was drained (details in *Table I*). Abdominal sonography soon after the drainage showed that the collection had reduced to 3 cm × 3 cm (*Fig. 2b*). The collecting bag was changed every 24 hours and the drained fluid measured. Initially it was 100 ml which decreased further. On second day of drainage, minimal ascites was evident on ultrasound examination which was thought to be reactive. On fifth day post drainage, the catheter was clamped. Repeat ultrasound was done after two days; no collection was seen, also there was no evidence of ascites. The catheter was removed the same day and the patient kept

TABLE I—*Clinical and Investigational Profile*

Parameter	Case 1	Case 2
Sex	Female	Male
Age (Yrs)	2	8
History		
Abdominal trauma	+	-
Fever	1 month	15 days
Occ. Vomiting	1 month	15 days
Pain abdomen	1 month	15 days
Abdominal swelling	20 days	15 days
Examination		
Increased abdominal girth	+	+
Tenderness in Umbilical region	+	+
Investigation Profile		
Hemogram	Within normal limits	Within normal limits
Serum amylase	Slightly raised (180) (Normal 80-150 units)	Within normal limits (120)
Plain *X*-ray abdomen and barium series	Soft tissue mass displacing stomach upwards and bowel loops in pelvis (*Fig. 1*)	Soft tissue mass displacing stomach and bowel
Ultrasound abdomen	An anechoic collection in umbilical region 15 cm × 13 cm, Pancreas not visualized. Rest normal	An anechoic collection 16 cm × 12 cm occupyng epigastrium and Lt. hypochondrium. Pancreas not visualized. Minimal ascites present
Aspirate analysis	Occasional pus cell and RBC present, Sterile on culture, Amylase present	Occasional RBC present. On culture sterile, Amalyse present
Follow up	Total resolution in seven days	Total resolution in 10 days

Fig. 2b. Residual cyst as seen on ultrasound scan immediately after the percutaneous drainage, Cyst - C, Spine - SP, Drainage tube - D.

on follow up. The last ultrasound was done after one month which was unremarkable.

Case 2: An eight-year-old male child was similarly diagnosed as a case a pseudocyst of pancreas (*Table I*). Percutaneous drainage of the pseudocyst was carried out and the cathether was left *in situ* for long term drainage as in *Case 1*. The patient was followed serially on ultrasound and the cathether was removed when considerable regression in the size of the lesion was seen and the patients clinical condition improved. The term considerable regression was used when the last ultrasound follow up revealed a small cystic remnant in a patient without symptoms and in whom no further treatment was considered necessary.

Discussion

Although pancreatic pseudocysts are relatively uncommon in childhood, the clinical presentation in our cases led us to suspicion of this diagnosis which was subsequently confirmed by abdominal ultrasonography. We also successfully utilized the relatively new and simpler technique of percutaneous drainage in these cases.

Ultrasound and CT have not only improved the understanding of the development and natural history of pancreatic pseudocysts but have also made possible a new therapeutic approach by percutaneous drainage. With the advances in international radiology, the radiologist is now more actively involved in patient management.

Spontaneous resolution of pseudocysts is estimated to be 20-25%(3). However, complications like obstruction of adjacent organs, rupture, hemorrhage and abscess formation may require surgical intervention(4). Pancreatic pseudocysts may be drained internally on externally. External drainage is more suitable if the pseudocyst is infected or of shorter duration as it has immature friable wall and if patients general condition is deteriorating. It is observed that there is immediate relief on pain and discomfort after the procedure.

Ever since Hancke and Pederson(5) successfully performed percutaneous drainage of pseudocysts, this method has become increasingly popular. However, needle aspiration of the cyst followed by continuous catheter drainage has more impressive results than needle aspiration alone especially when the cyst fluid is difficult to be evacuated completely. Failure results with needle aspiration alone include technical failure, inabi-

lity to evacuate the cyst completely, recurrence that could not be successfully treated by repeat percutaneous techniques and recourse to surgery. Hence, it is recommended to use continuous catheter drainage(6).

In conclusion, it can be said that percutaneous drainage of pancreatic pseudocysts is the procedure of first choice. It has an almost non-existent mortality and a low complication rate(7). Maturity of the cyst is not a prerequisite. Guidance by imaging modalities like ultrasound bring about an accurate approach of the lesion and all the hazards of a major operation are thus avoided.

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NOTES AND NEWS

SECOND SERC SCHOOL IN BASIC IMMUNOLOGY

The Second SERC School in Basic Immunology will be held in the Department of Immunology, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow from *14th February to 5th March, 1994*. The course will include lecture series on basic immunological concepts and practical training in various laboratory techniques. The emphasis will be on the understanding and diagnosis of immunologically mediated diseases including rheumatic, allergic, infectious and malignant diseases. Applications are invited from junior and middle level scientists (medical and non-medical) with complete biodata, details of present occupation, recommendation from Supervisor, and a 250 word write-up for wanting toattend the course.Twenty selected candidates will be paid TA/DA as per eligibility.

Applications should reach by 15th December, 1993 and addressed to:

Dr. S.S. Agarwal,
Department of Immunology,
SGPGIMS, Lucknow 226 014.