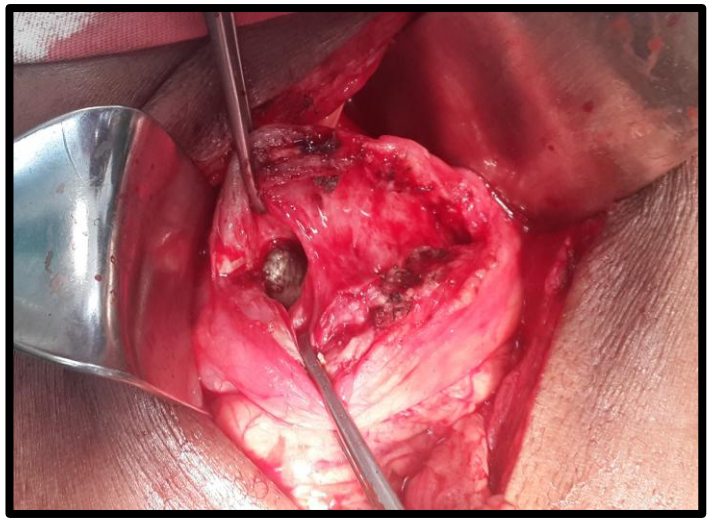
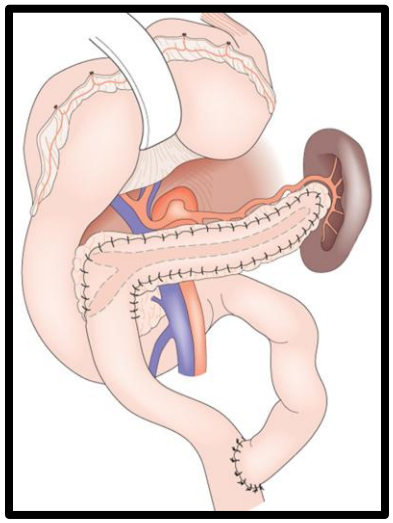
EVIDENCE BASED MEDICINE

Outcome of surgical drainage of the Pancreatic duct in chronic pancreatitis





Keynote speaker: **Dr Shahalam Sarkar**
Associate Professor
Department of Surgery
Ad-din Women's Medical College

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Endoscopic versus Surgical Drainage of the Pancreatic Duct in Chronic Pancreatitis

Djuna L. Cahen, M.D., Dirk J. Gouma, M.D., Ph.D., Yung Nio, M.D., Erik A. J. Rauws, M.D., Ph.D., Marja A. Boermeester, M.D., Ph.D., Olivier R. Busch, M.D., Ph.D., Jaap Stoker, M.D., Ph.D., Johan S. Laméris, M.D., Ph.D., Marcel G.W. Dijkgraaf, Ph.D., Kees Huibregtse, M.D., Ph.D., and Marco J. Bruno, M.D., Ph.D.

CONCLUSIONS

Surgical drainage of the pancreatic duct was more effective than endoscopic treatment in patients with obstruction of the pancreatic duct due to chronic pancreatitis. (Current Controlled Trials number, ISRCTN04572410.)

Early Surgery or Endoscopy for Painful Chronic Pancreatitis?

David J. Bjorkman, NEJM Journal Watch :p NA58213, 2024. |
DOI: 10.1056/nejm-jw.NA58213

A long-term review published in NEJM Journal Watch indicates that early surgical intervention provides superior pain relief and higher patient satisfaction compared to an endoscopy-first approach for painful chronic pancreatitis.

Results

- At the end of long-term follow-up, pain scores and rates of patient satisfaction were superior in the early surgery group, “very satisfied” with their treatment (71% vs. 33%) P<0.001].
- A single procedure was sufficient to adequately treat the pain in 60% of patients in the early surgery group, compared with 12% in the endoscopy-first group.
- Early surgery was clearly superior to Endoscopic treatment

Our study

Published in indexed journal

Conclusion

is 15%. In this small series, we found that surgery if done early, can have good remission of abdominal pain and can slow the progression of chronic pancreatitis in majority of patient. Patient with chronic calcific pancreatitis and diabetes are likely to have unfavorable outcome even after decompressive surgery.

PMID: 28588169 [Indexed for MEDLINE]

Similar articles

Published in ANZ journal

HP004

OUTCOME OF SURGICAL DRAINAGE OF THE PANCREATIC DUCT IN CHRONIC PANCREATITIS

SARDAR REZAUL ISLAM, SHAFIQUR RAHMAN, SHAHINUR RAHMAN, HALDAR KUMAR AND SHAHALAM SARKAR

Jahurul Islam Medical College Hospital, Bajitpur, Kishoreganj Bangladesh

Background: Abdominal pain, one of the major symptoms of chronic pancreatitis, is believed to be due to obstruction of the pancreatic duct system by stones or strictures. Surgical decompression of the duct and ductal drainage can achieve best pain relieve and slow the progression of the disease.

Methodology: We studied 20 cases operated in our hospital between January 2010 and October 2015. Patients were selected with pre-operative ultrasonography. Dilatation of the main pancreatic duct by at least 7 mm proximal to the obstruction were recruited for operation.We did Roux-Y lateral pancreato-jejunostomy (LPJ) for patients with obstruction of the pancreatic duct due to stricture or intraductal stones or both. We did additional distal pancreatectomy in case of stone in the tail area.We did one Frey,s operation for stone and fibro-calcification of the head.

Results: We found 16 out of 20 patients got complete remission of abdominal pain with no progression of their disease. Ultrasonic evidence of chronic pancreatitis have improved or resolved. Ductal diameter have decreased. They did not develop diabetes nor malabsorbtion. One had a recurrence of stone in the head within a year. Three died during this follow-

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ASCR ARCHIVES OF SURGERY AND CLINICAL RESEARCH
ISSN 2576-9537

Research Article

Lateral Pancreato-Jejunostomy in Chronic Pancreatitis: An appraisal of 32 cases

Sardar Rezaul Islam[1]*, Shafiqur Rahman[2], Shaurav Talukdar[3], Shah Alam Sarkar[4], Shah Poran[5] and Mushfiqur Rahman[5]

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DOI: dx.doi.org/10.29328/journal.ascr.1001043

ORCiD: orcid.org/0000-0003-1685-1208

Table 1: Summery of the operative findings and hospital stay.

	Mean	Range
MPD diameter	13.7mm	7 to 26 mm
Duration of operation	1.45 min	1.25 to 2.35 min
Post-op hospital stay	8.5 days	7-13 days

Summary of Outcome

Table 2: Pathology, procedure done and outcome.

No of cases	Per-operative findings	Procedure done	Outcome
28	Stone in the body and or Head	LPJ	25 are alive 1 died 1 recurrence in the head (MPD) 1 recurrence in the parenchyma
1	Fibro calcification and stone in the head of the pancreas	Frey's operation and LPJ	Alive
2	Stone in the head, body and tail	Distal pancreatectomy and LPJ	Alive
1	MPD stone and obstructed CBD due to peri-ampullary stricture.	Choledocho-jejunostomy and LPJ	Died about one year after surgery due to complications of diabetes.

Conclusion

Successful removal of pancreatic duct stones and drainage of the pancreatic duct can reduce pain and improve pancreatic function in majority of patients. Roux Y lateral pancreato-jejunostomy is the best way to achieve that drainage. Patients with chronic calcific pancreatitis and diabetes are unlikely to have favorable outcome even after de-compressive surgery.

The Journal of Ad-din women's medical college

Volume 8, Number 1, January 2020

Original Article

Outcome of Lateral Pancreato-Jejunostomy in Chronic Pancreatitis- Our Experience in two tertiary care hospitals

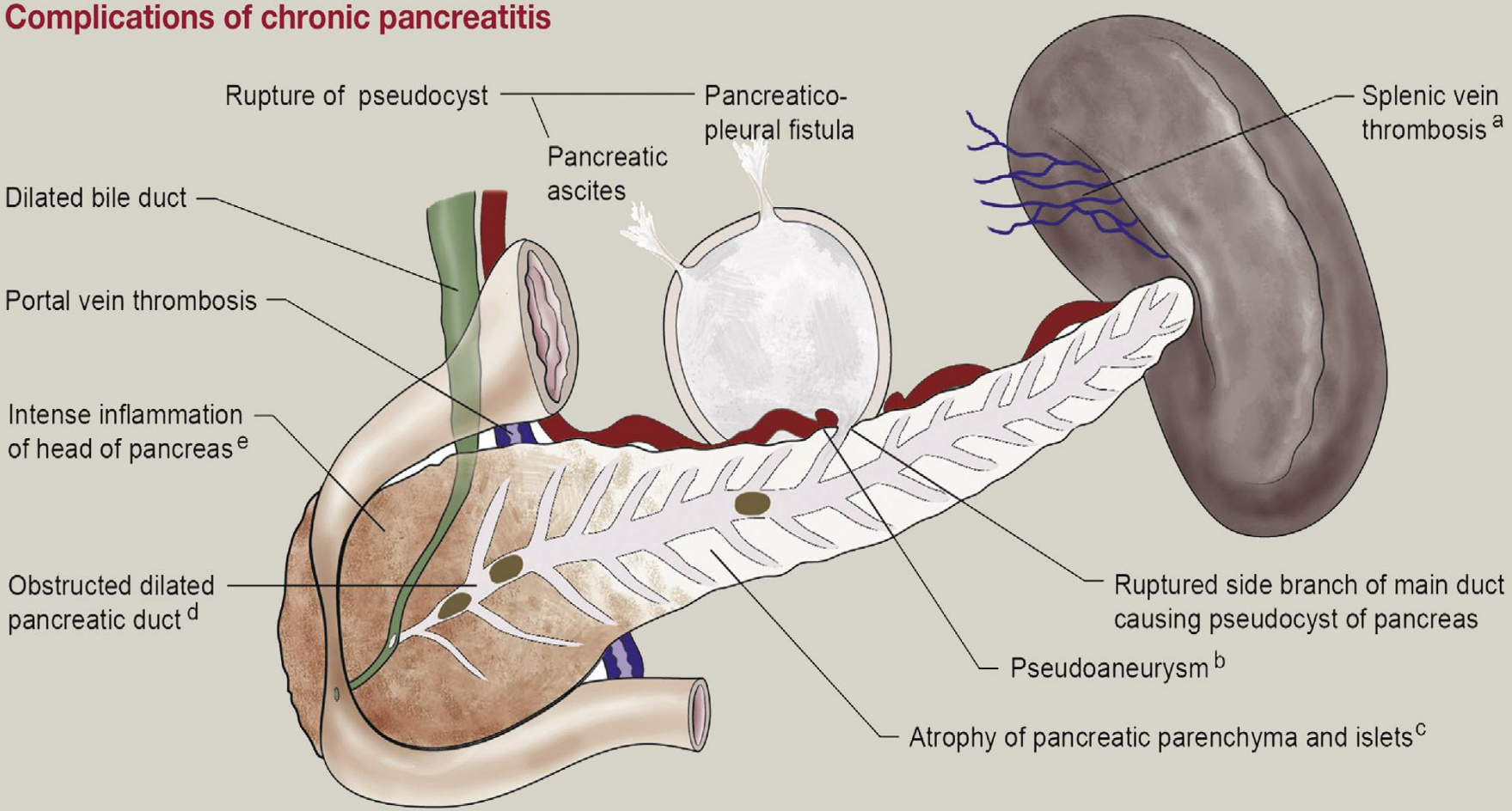
Md. Hanif[1], Sardar Saminul Islam[2], Fatema Tuz Zohra[3], Shah Alam Sarkar[4], Debabrata Paul[5], Sardar Rezaul Islam[6]

Abstract

Background: Abdominal pain, one of the major symptoms of chronic pancreatitis, is believed to be caused by obstruction of the pancreatic duct system by stones or strictures. This results in increased intraductal pressure and parenchymal ischemia. Surgical decompression of the duct and ductal drainage can achieve best pain relieve and slow the progression of the disease. We awant to share our experience of surgical drainage of pancreatic duct in chronic pancreatitis in our hospital.

Methodology: We studied 37 cases of Chronic Pancreatitis operated in two hospitals between January 2010 and January 2019. Patients were selected with pre-operative ultrasonography, MRCP. Dilatation of the main pancreatic duct by at least 7 mm proximal to the obstruction were recruited for operation. We did Roux-Y lateral pancreato-jejunostomy (LPJ) for patients with obstruction of the pancreatic duct due to stricture or intraductal stones or both. We did additional distal pancreatectomy in case of stone in the tail area for 2 cases. We did one Frey's operation for stone and fibro-calcification of the head. We evaluated their symptoms, their duration, post-operative hospital stays and complications following surgery. We studied their pain control, recurrence and mortality during this period. We followed these patients for more than 5 years.

Complications of chronic pancreatitis



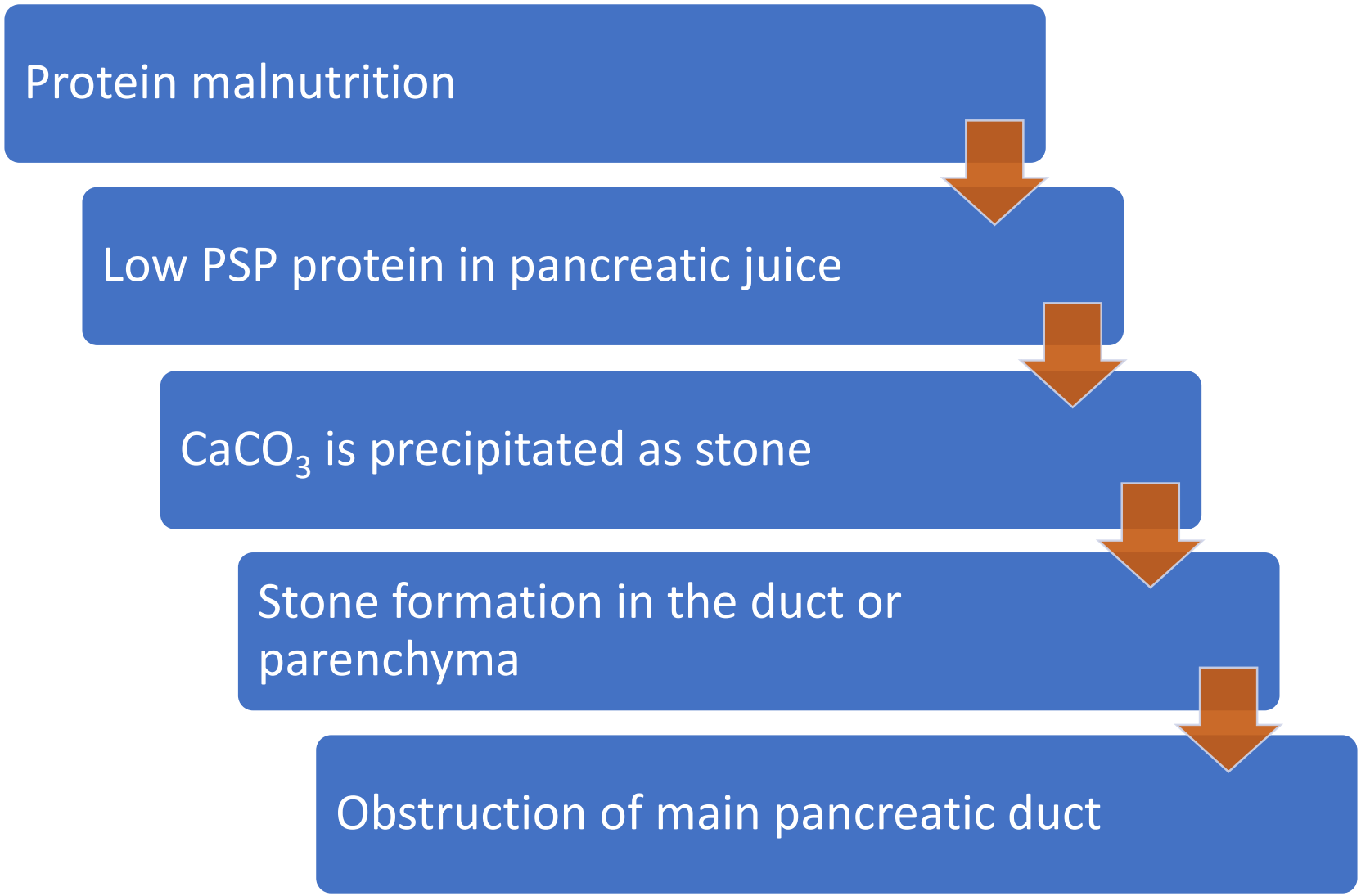
a, splenic vein thrombosis causing 'sinistral' or left-sided portal hypertension with splenomegaly and gastric varices; b, pseudoaneurysm involving the splenic artery; c, atrophic changes causing diabetes; d, duct with multiple stones causing exocrine insufficiency; e, inflammation with biliary and duodenal stenosis and upstream dilatation

Introduction

- Chronic pancreatitis is often associated with ductal dilatation with or without stone.
- Stones are composed of $CaCO_3$
- Radio-opaque unlike gall stone
- Obstructed ducts are causes of abdominal pain and require decompression.

Pathogenesis of stone formation

- Pancreatic juice is supersaturated with calcium.
- Calcium is kept in solution by HCO_3, citrate, and pancreatic stone protein (PSP),
- These factors are low in patients with chronic pancreatitis
- Low PSP causes crystallization and deposition of calcium carbonate and the formation of stones


Protein malnutrition
Low PSP protein in pancreatic juice
$CaCO_3$ is precipitated as stone
Stone formation in the duct or parenchyma
Obstruction of main pancreatic duct

Obstruction by stone causes dilatation of MPD

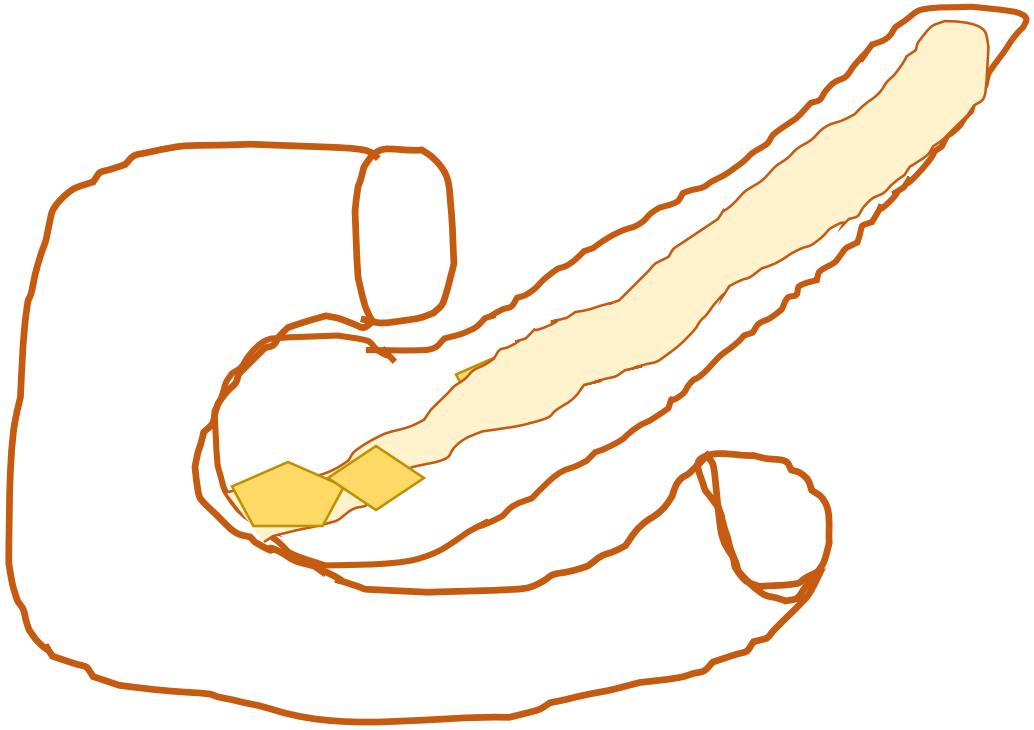
Periductal fibrosis and parenchymal fibrosis due to retrograde flow of Pancreatic juice

Stricture formation and further obstruction of ducts, intra ductal hypertension causes chronic pain

Parenchymal damage causes loss of endocrine and exocrine function of the pancreas

Malnutrition, diabetes, chronic pain

Stones in the main pancreatic duct



Parenchymal calcification

Causes of abdominal pain

- Intraductal hypertension
- Increased pancreatic tissue pressure,
- Pancreatic ischaemia,
- Neural inflammation
- Ongoing recurrent pancreatic injury

Diagnosis

- USG
- Plain X-ray abdomen
- MRCP
- ERCP
- CT scan

Modalities of treatment

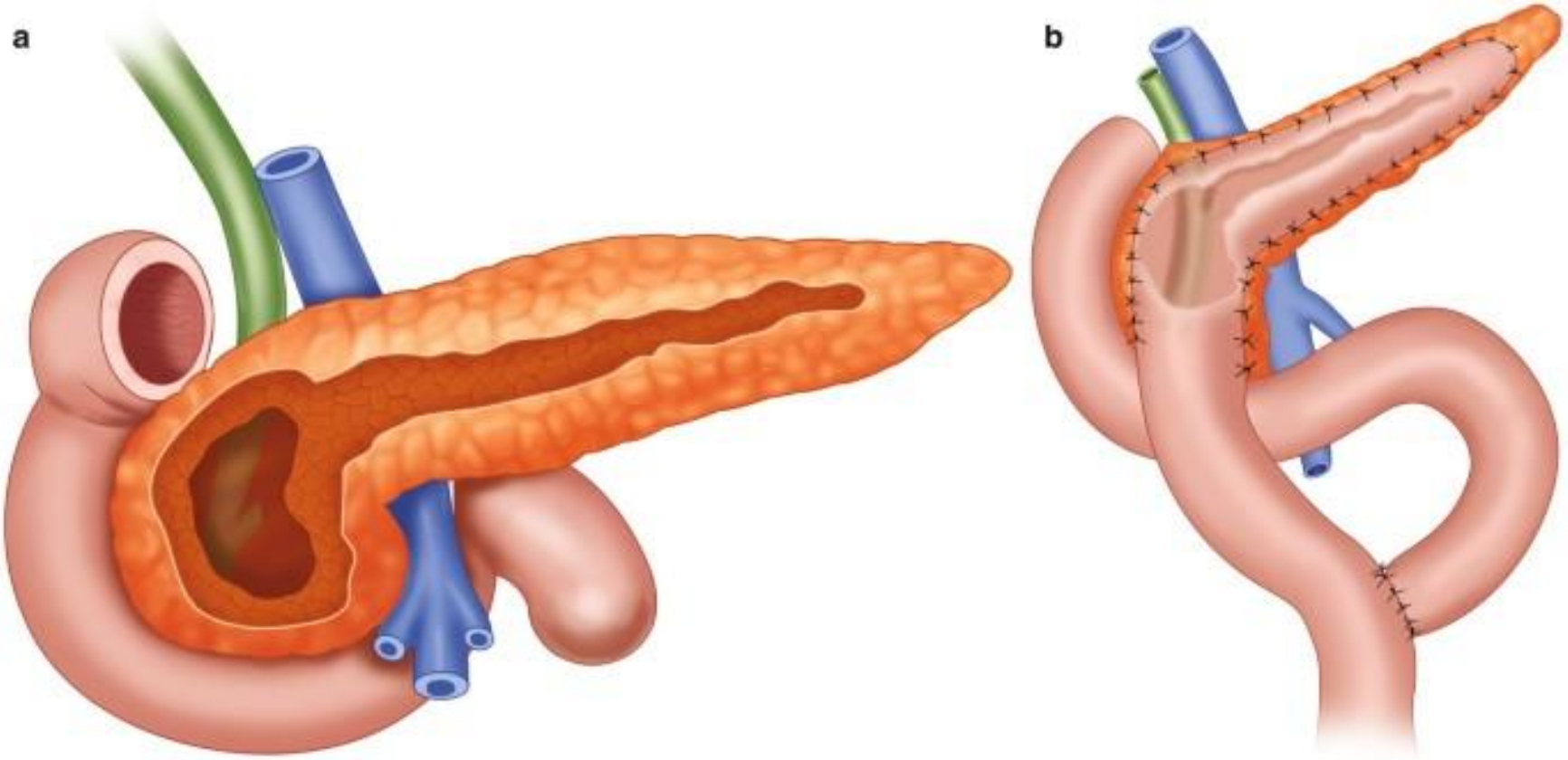
- Medical treatment when ducts are not dilated.
- Surgery
- Endoscopic extraction of stone (ERCP)
- ESWL to break the stone and removal by ERCP

Surgical option

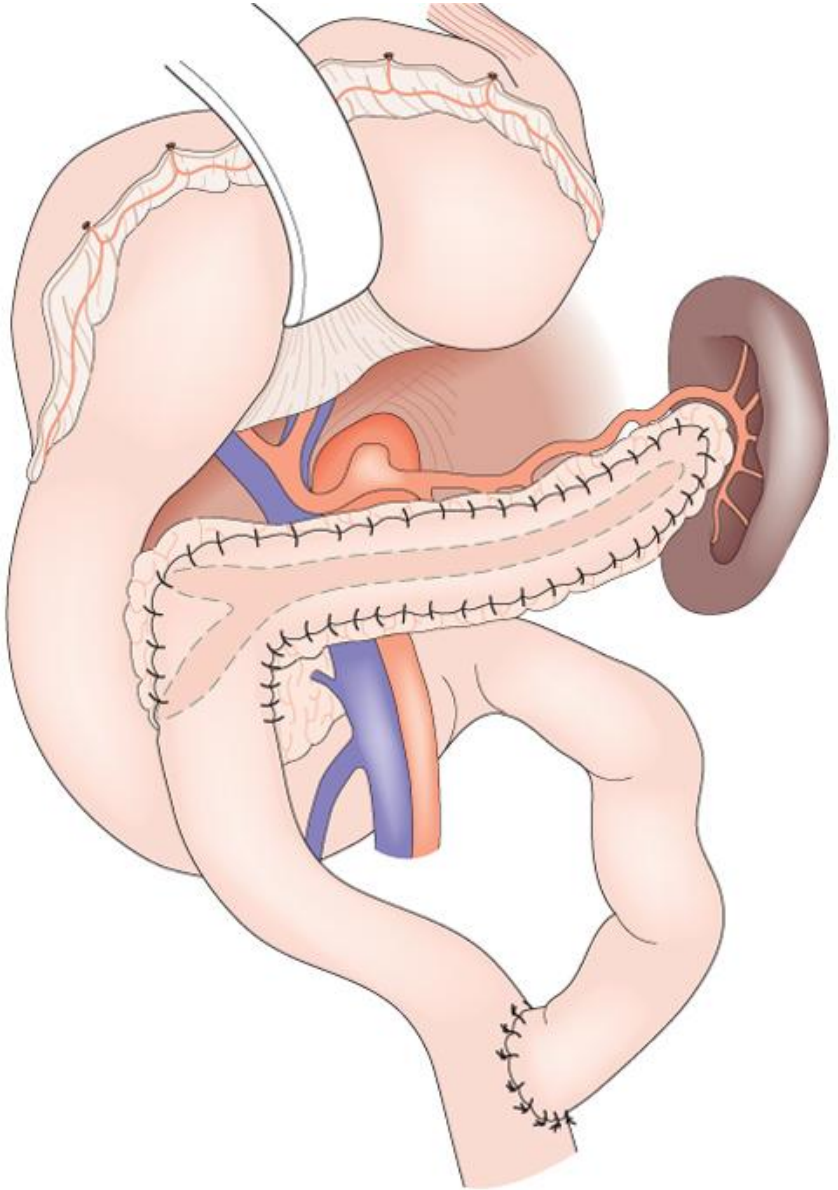
- Puestow operation-Lateral pancreto-jejunostomy(LPJ)
- Frey's operation- Excision of head and pancreato-jejunostomy(LR-LPJ)
- Distal pancreatectomy
- Beger procedure-DPRHP
- Pancreato-duodenectomy (Whipple's operation)

History of Pancreatic duct stone surgery

- In 1958, Puestow and Gillesby introduced the lateral pancreaticojejunostomy
- This consisted of a longitudinal incision of the pancreatic duct and implantation of the tail of the gland into the Roux-en-Y limb of the jejunum plus splenectomy and distal pancreatectomy.


a
b

Lateral Pancreato-jejunostomy (Puestow operation)



Benefit of surgical treatment

- Ductal decompression
- Reduction of intraductal pressure
- Improvement of drainage of pancreatic juice
- Correction of stricture
- All helps in relieving pain and delay the progression of the disease.

Advantage of lateral pancreto-jejunostomy

- Overall pain relief in published studies occurs in 50-90% of patients.
- Another advantage of the lateral pancreaticojejunostomy is preservation of endocrine and exocrine pancreatic function.

Summary of our study

- 52 cases were operated between Jan 2010 till Jan2025
- Duration of symptoms ranges from a few days to 5 years
- Age of patient ranges 11 to 60 years
- 26 cases had moderate to severe degree of pancreatitis on USG, no diabetes, no mal-absorbtion
- 17 had sever degree of diabetes and mal-absorbtion (required pancreatic enzyme supliment and insulin) .

Outcome

- F:M-3:2
- Duration of operation- 1.25 min-2.35min
- Ductal diameter7-26mm(13.4mm)
- The length of pancreatodocotomy 6 to 10 cm
- Roux-Y LPJ
- 2/0 vicryl continuous or interruped.

Procedures

- Puestow operation (LPJ)-51
- Frey,s operation(LR-LPJ)-1
- Additional distal pancreatectomy-2
- All Roux-Y LPJ
- Choledoco-jejunostomy-1
- Additional cholecystectomy

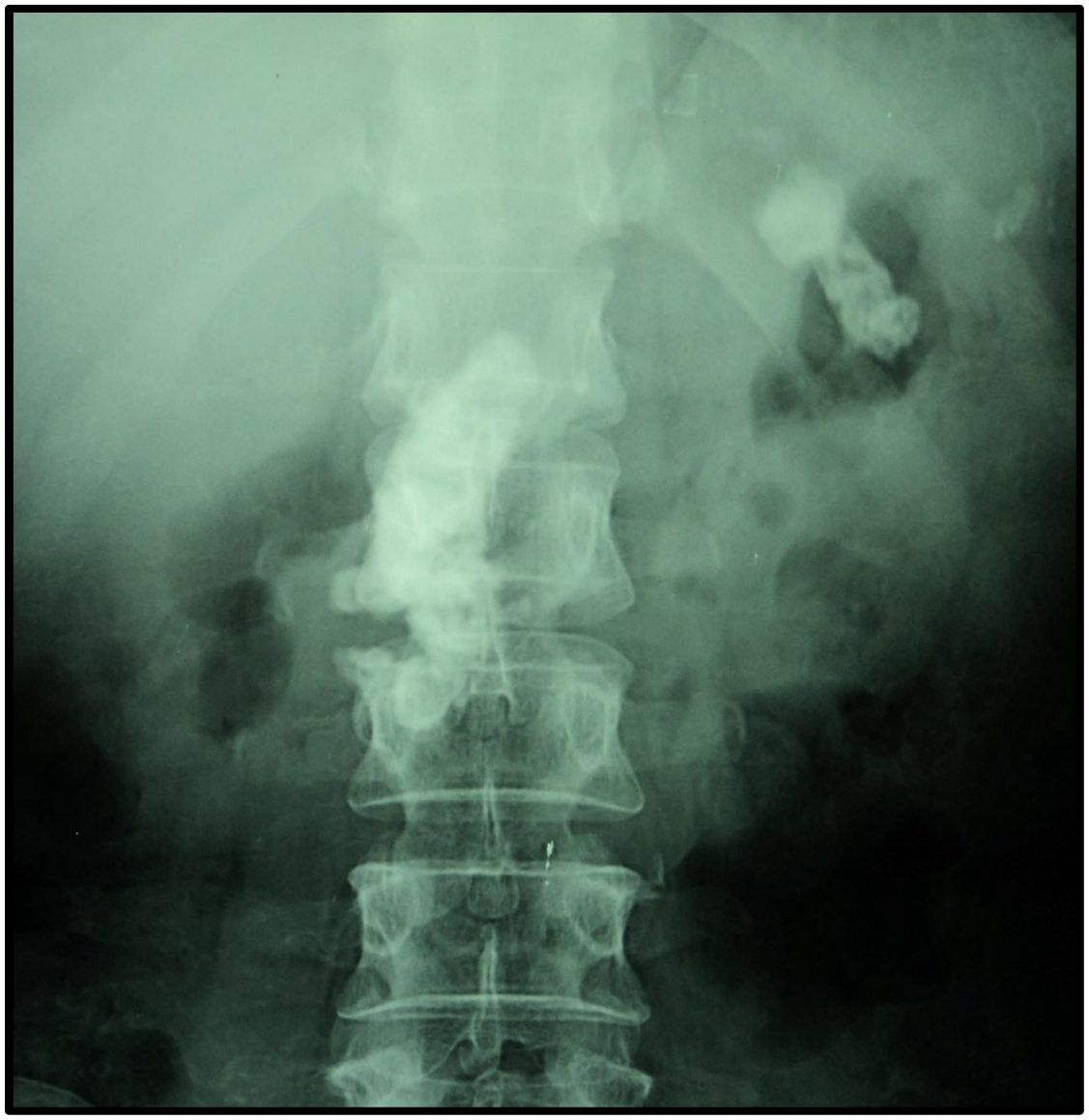
Outcome

- No 30 days post-op mortality
- 1 died after 3 months (Intestinal resection-short bowel syndrome)
- 3-Carcinoma of the pancreas

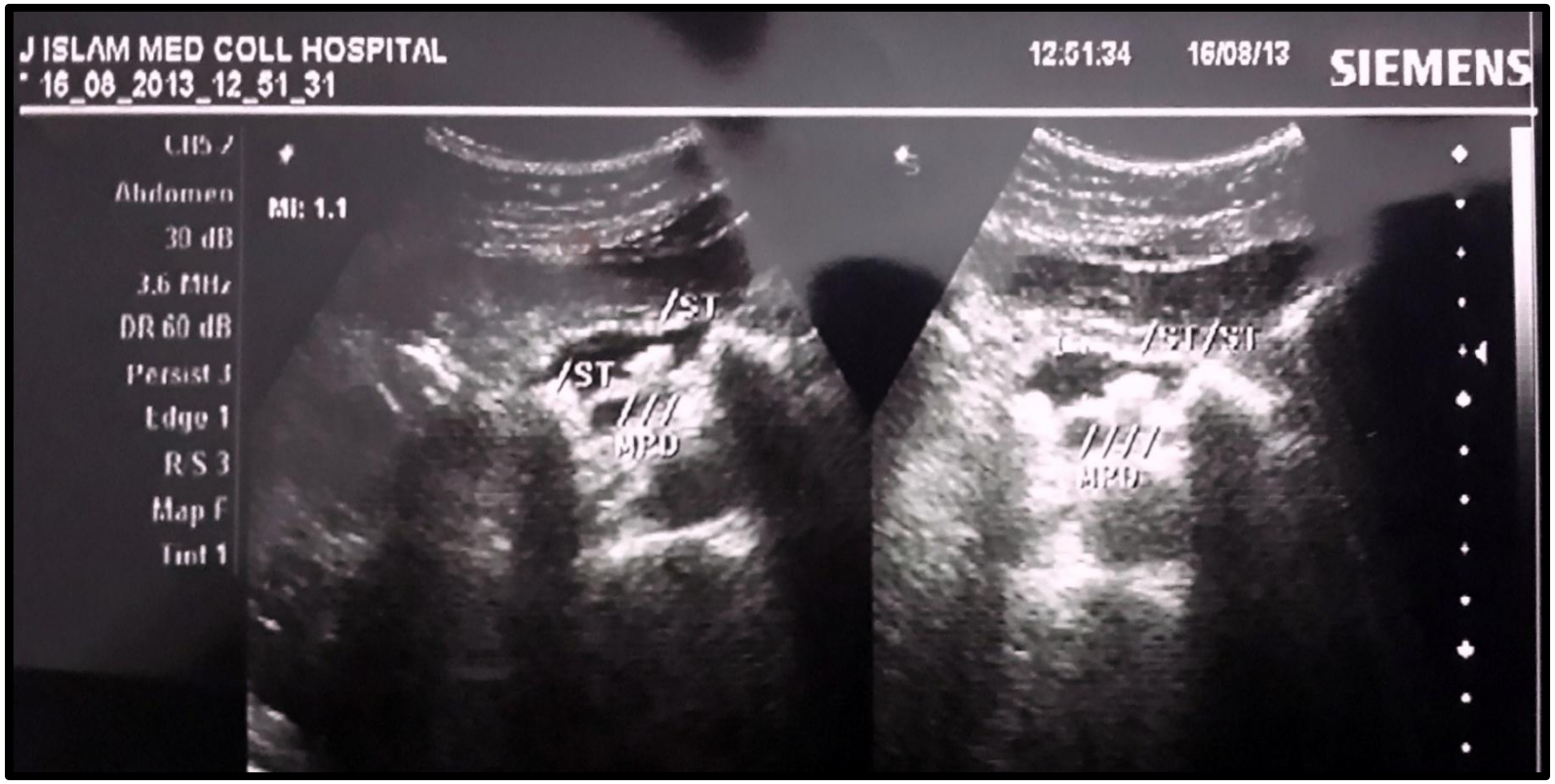
Outcome

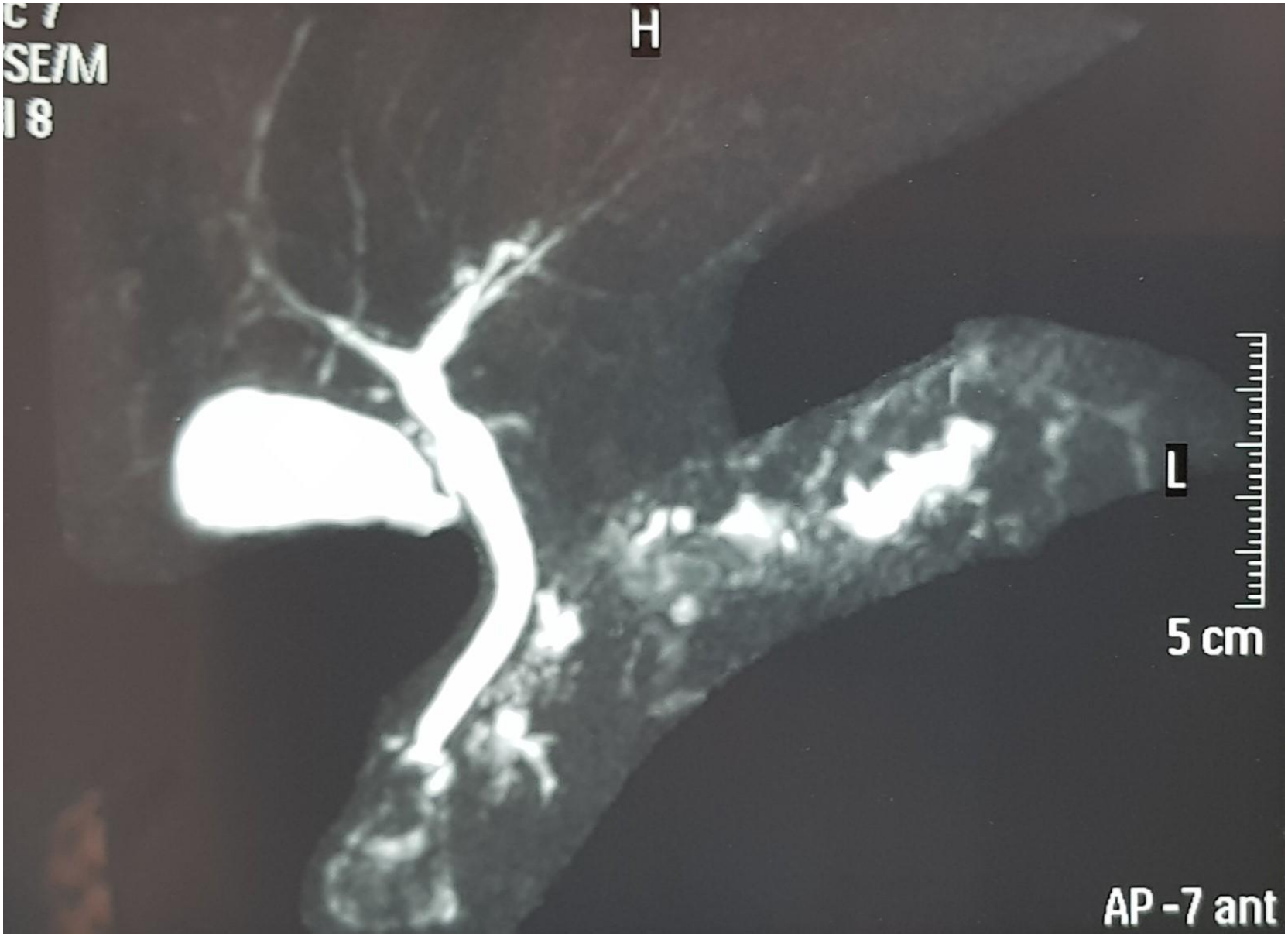
- Pain free survival in our series in a 5 year follow up is about 79%.
- Mortality is about 10%.
- Recurrence of stone is about 5%.

Stones seen on plain X-ray



Multiple stones on USG

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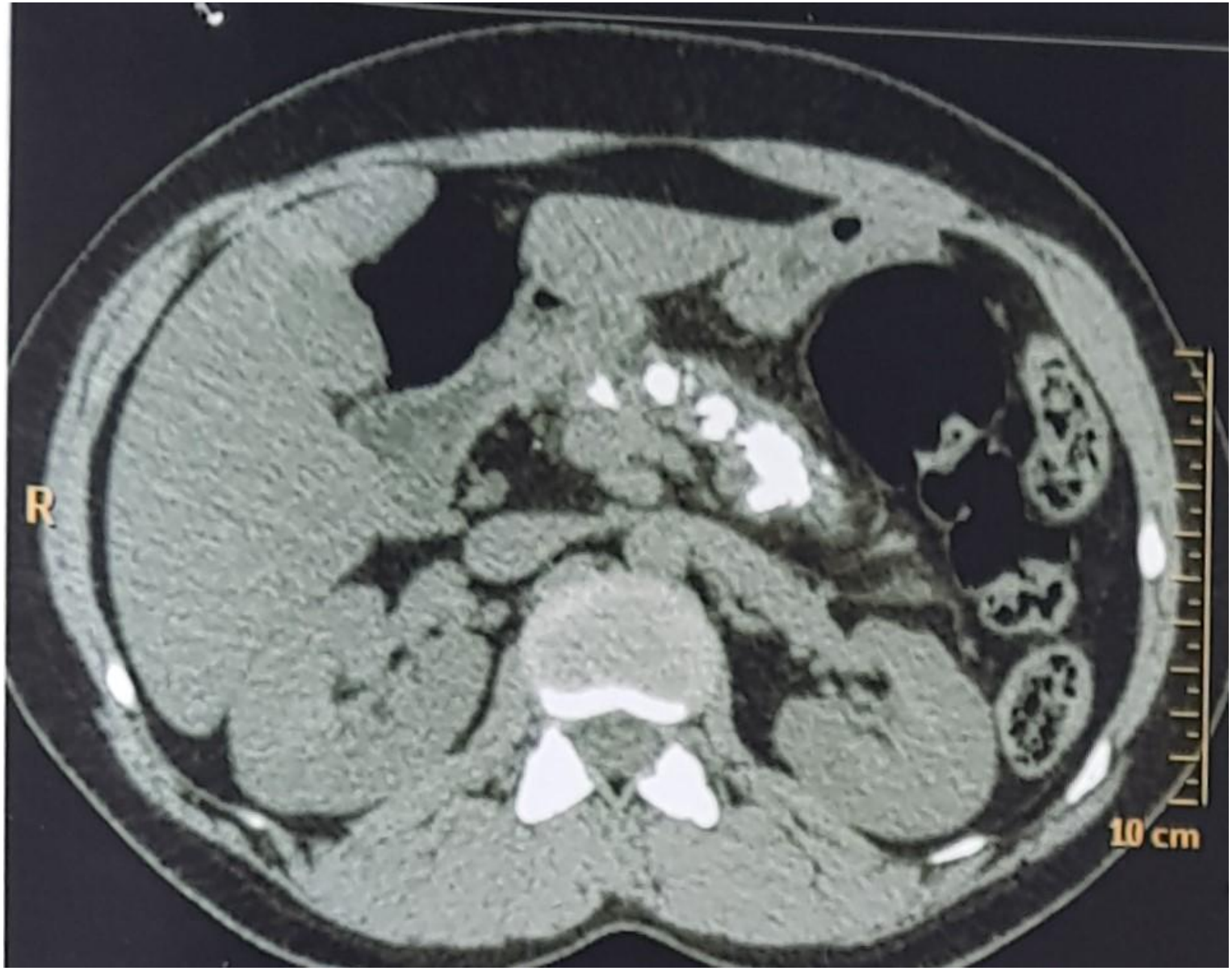
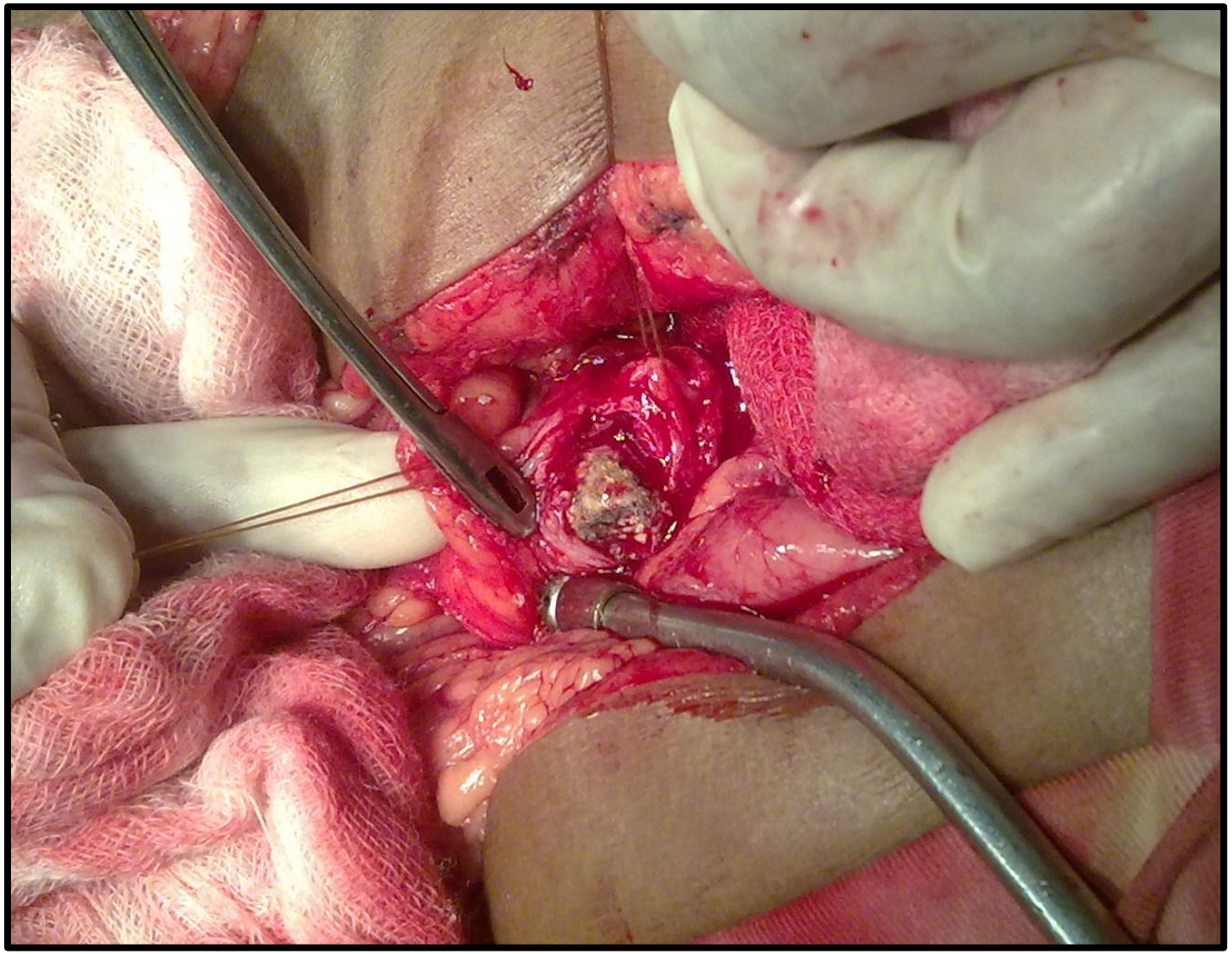
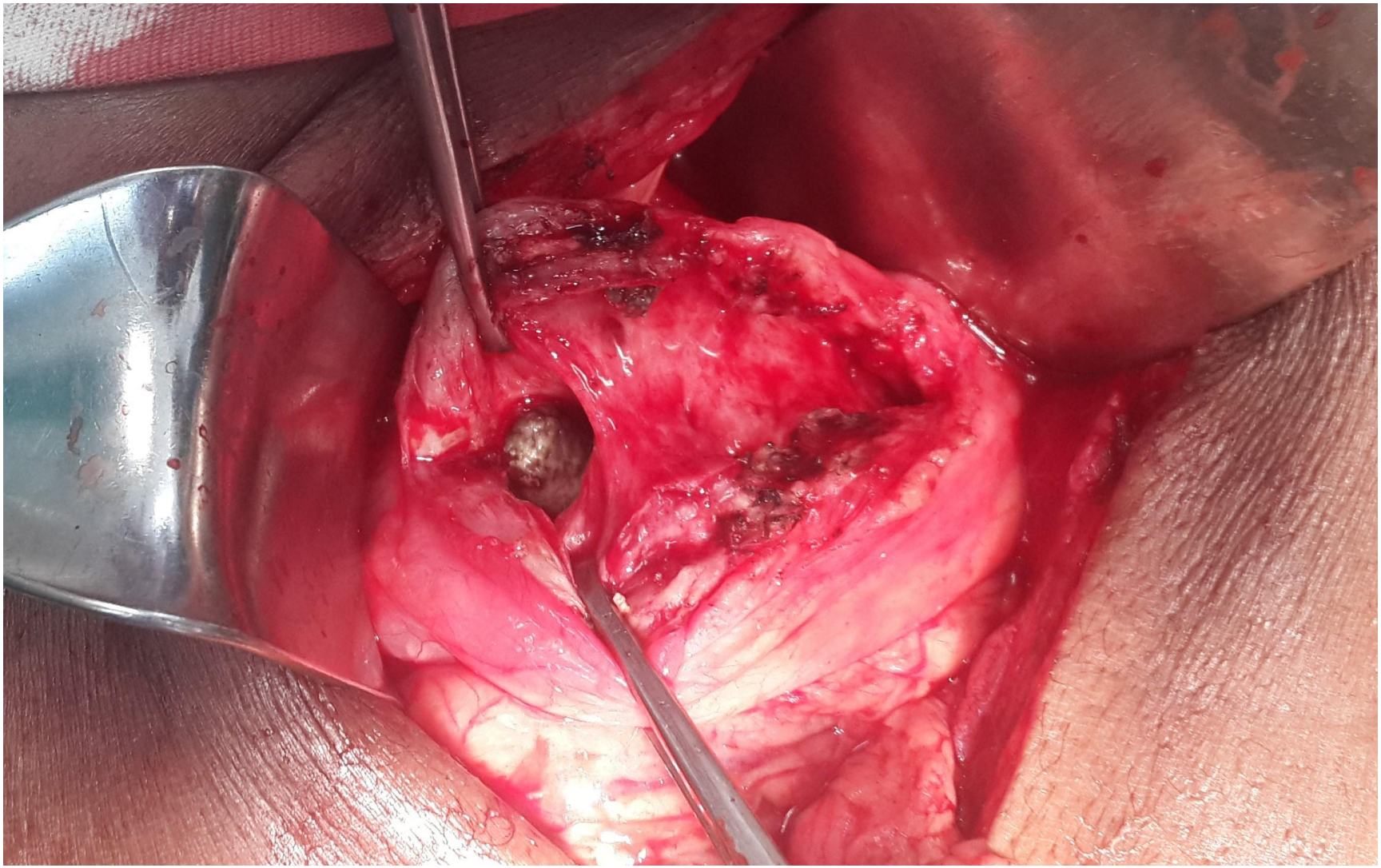
H
L
5 cm
AP -7 ant

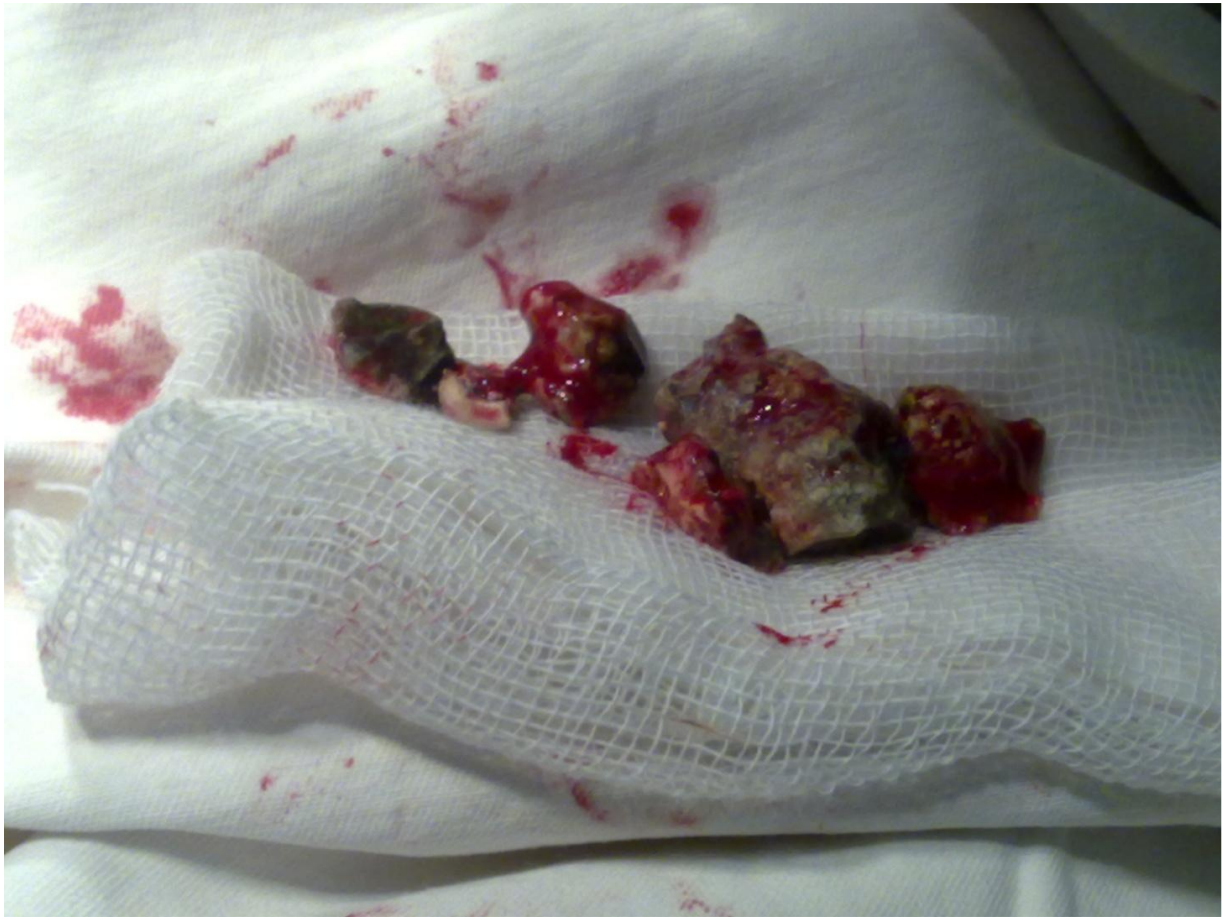

R
10 cm

Stone in the MPD

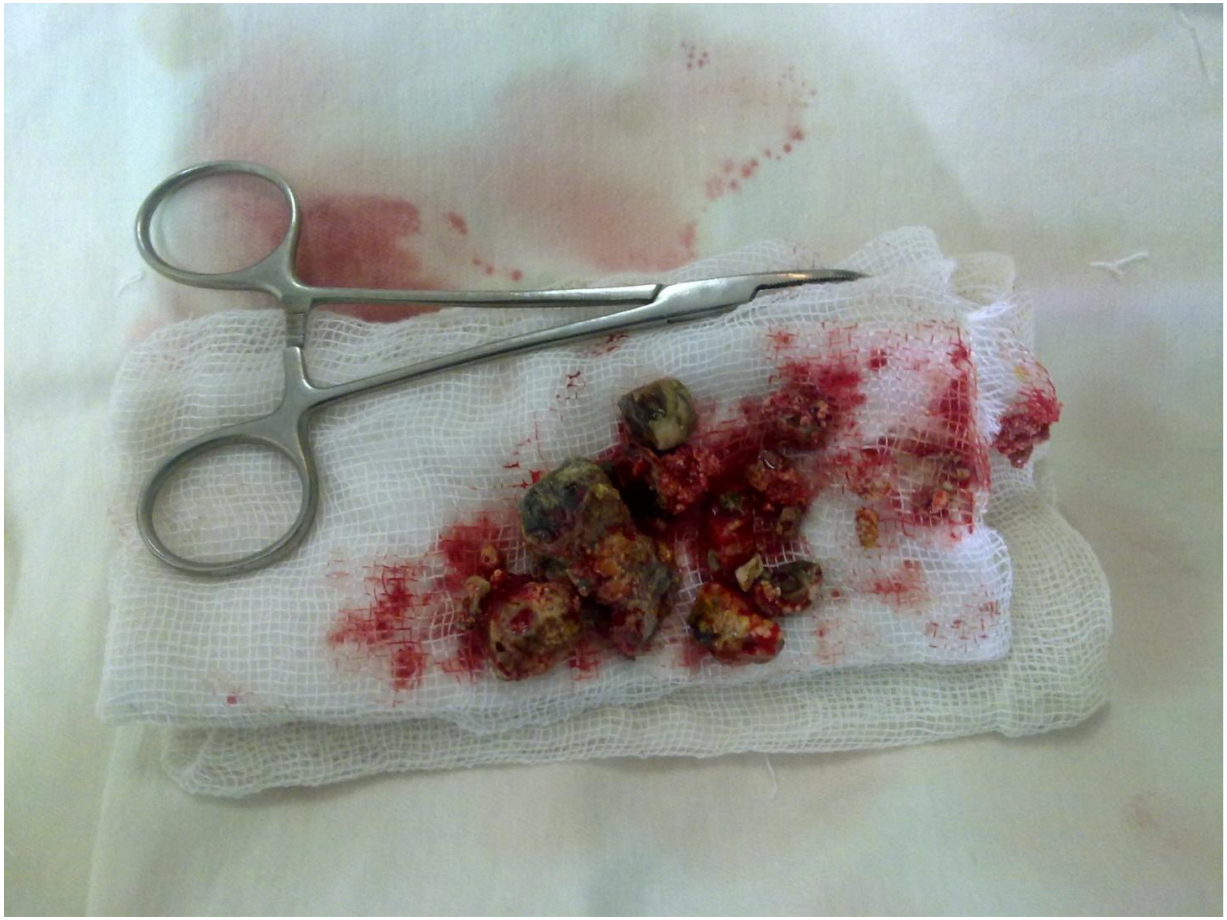


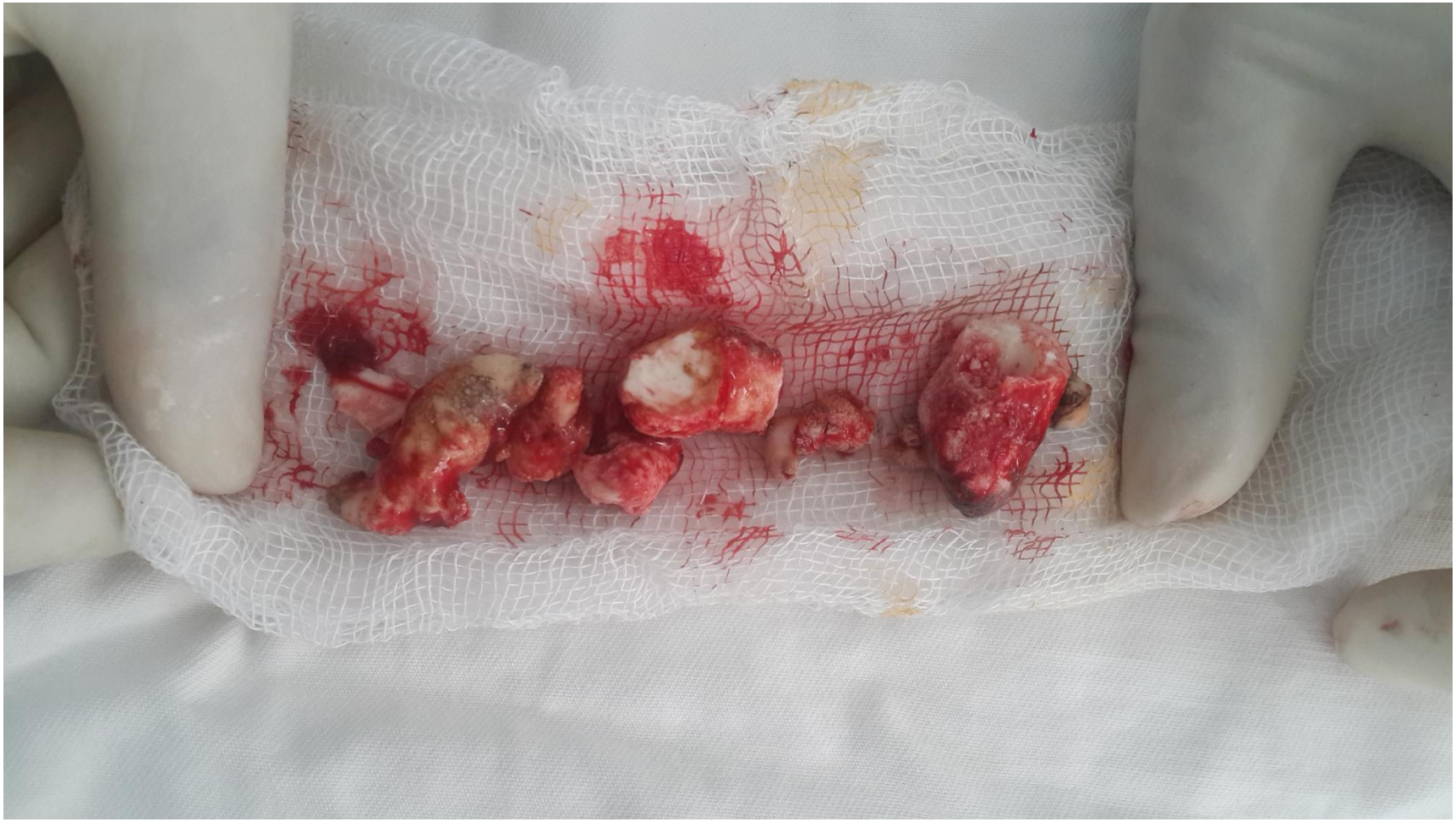


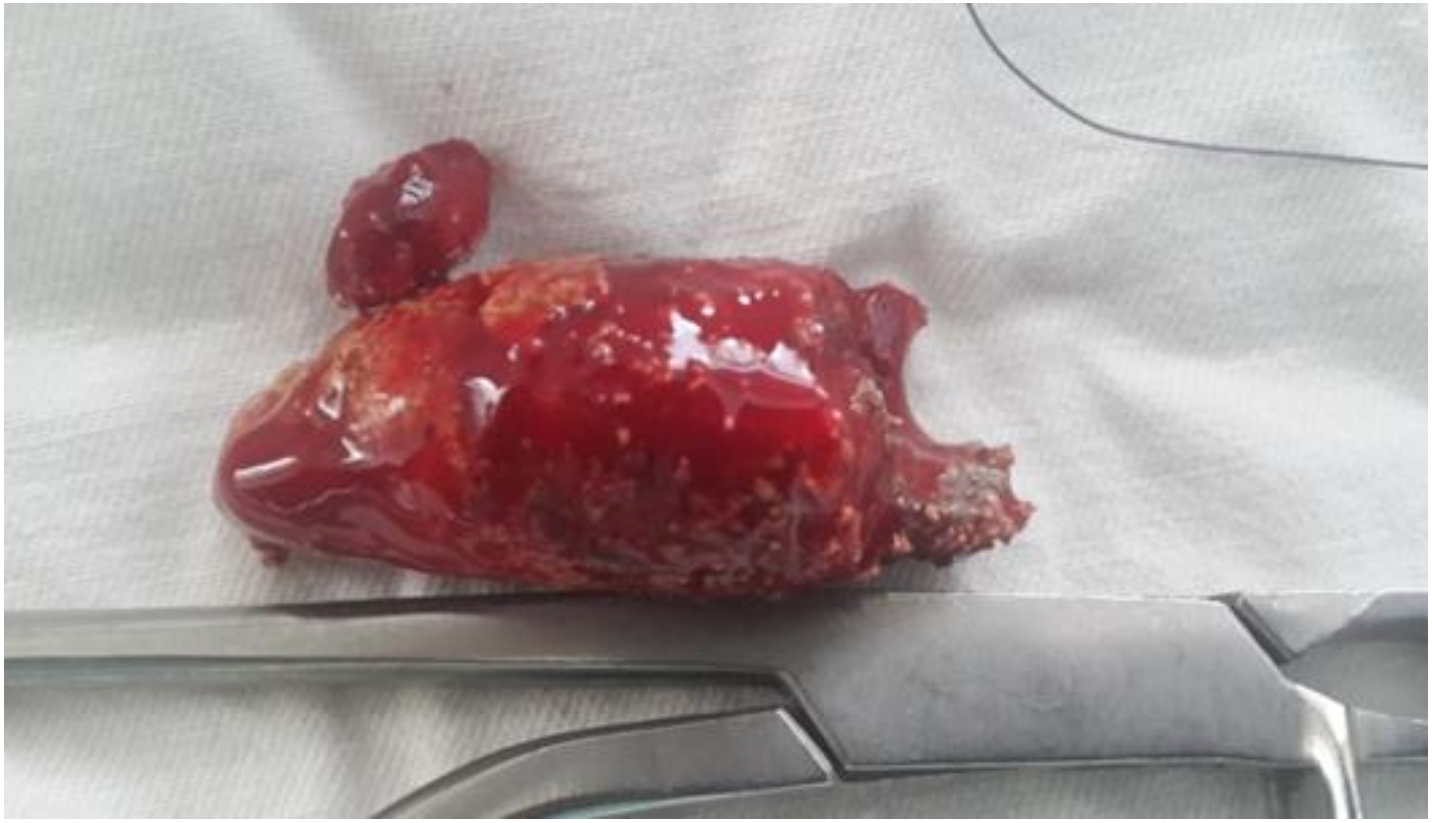
Extracted stone

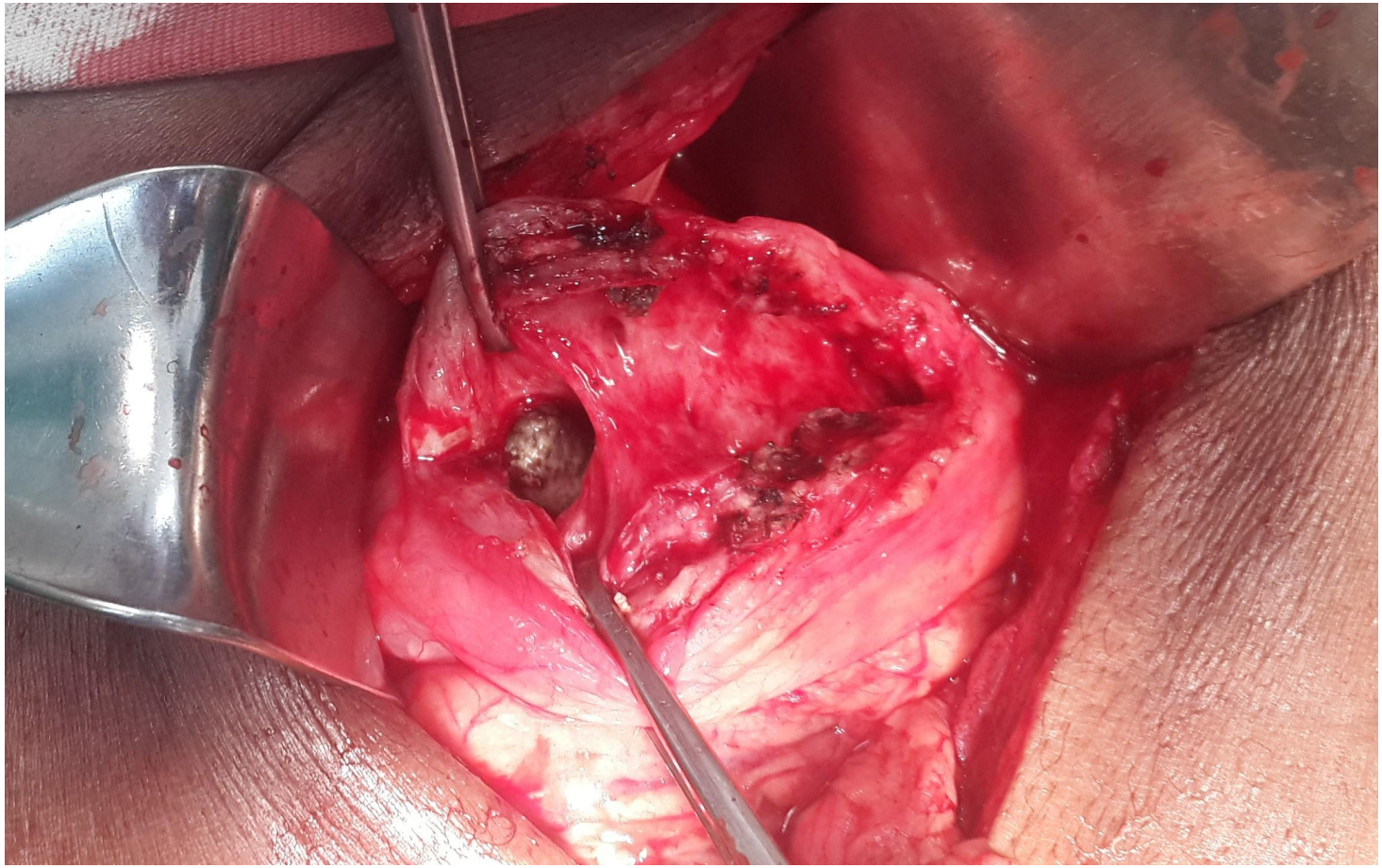


Extracted stone

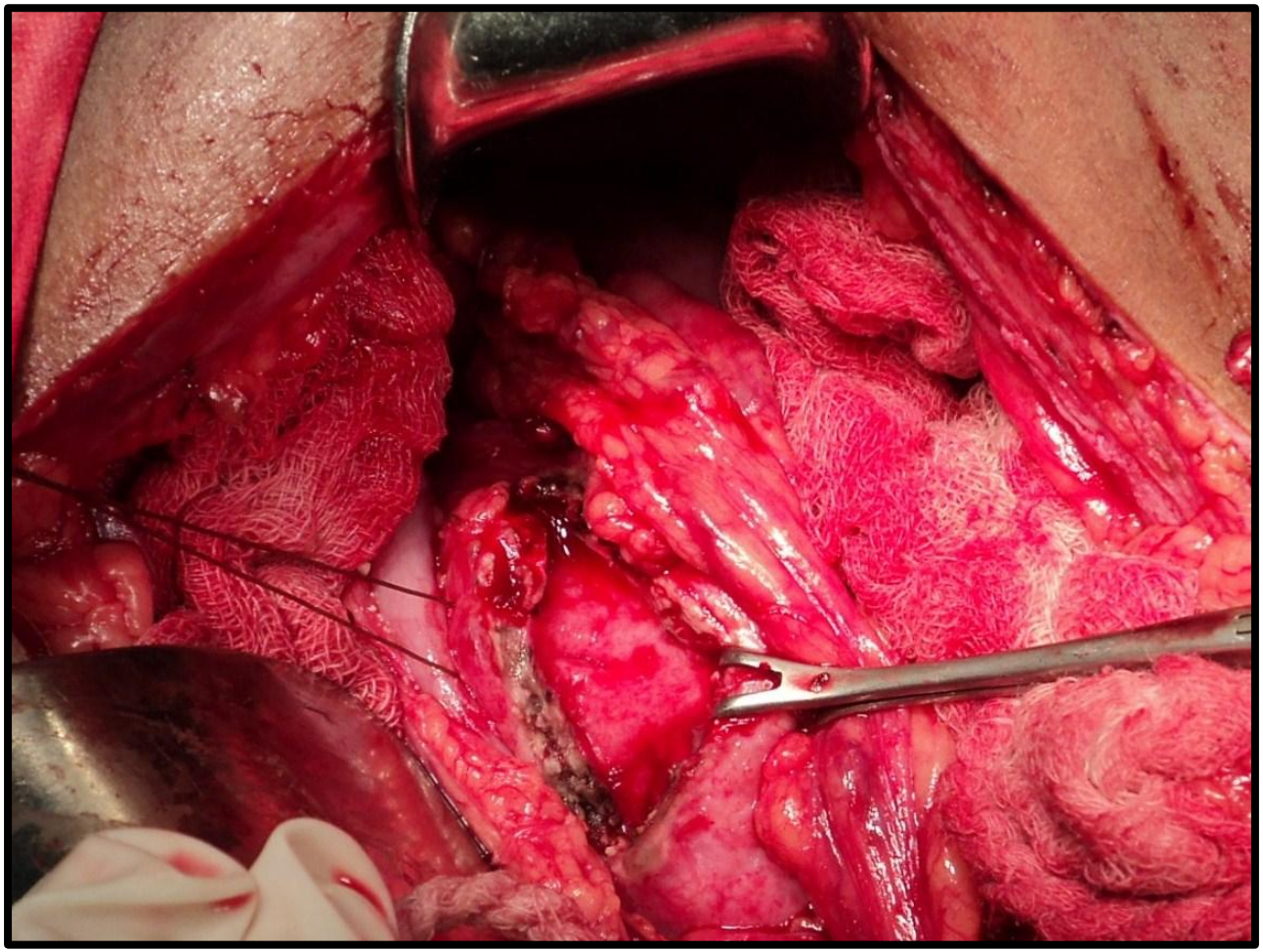


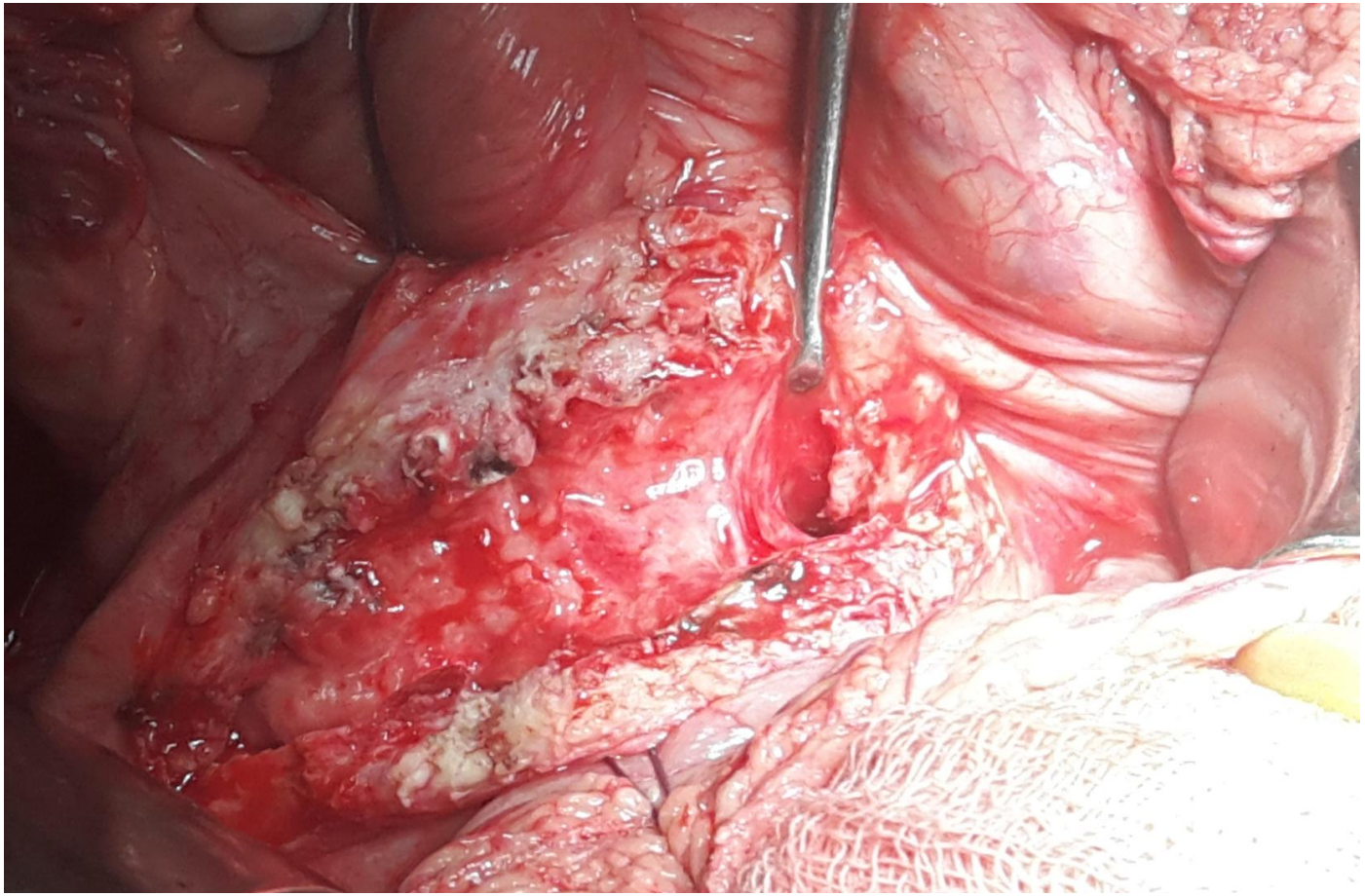


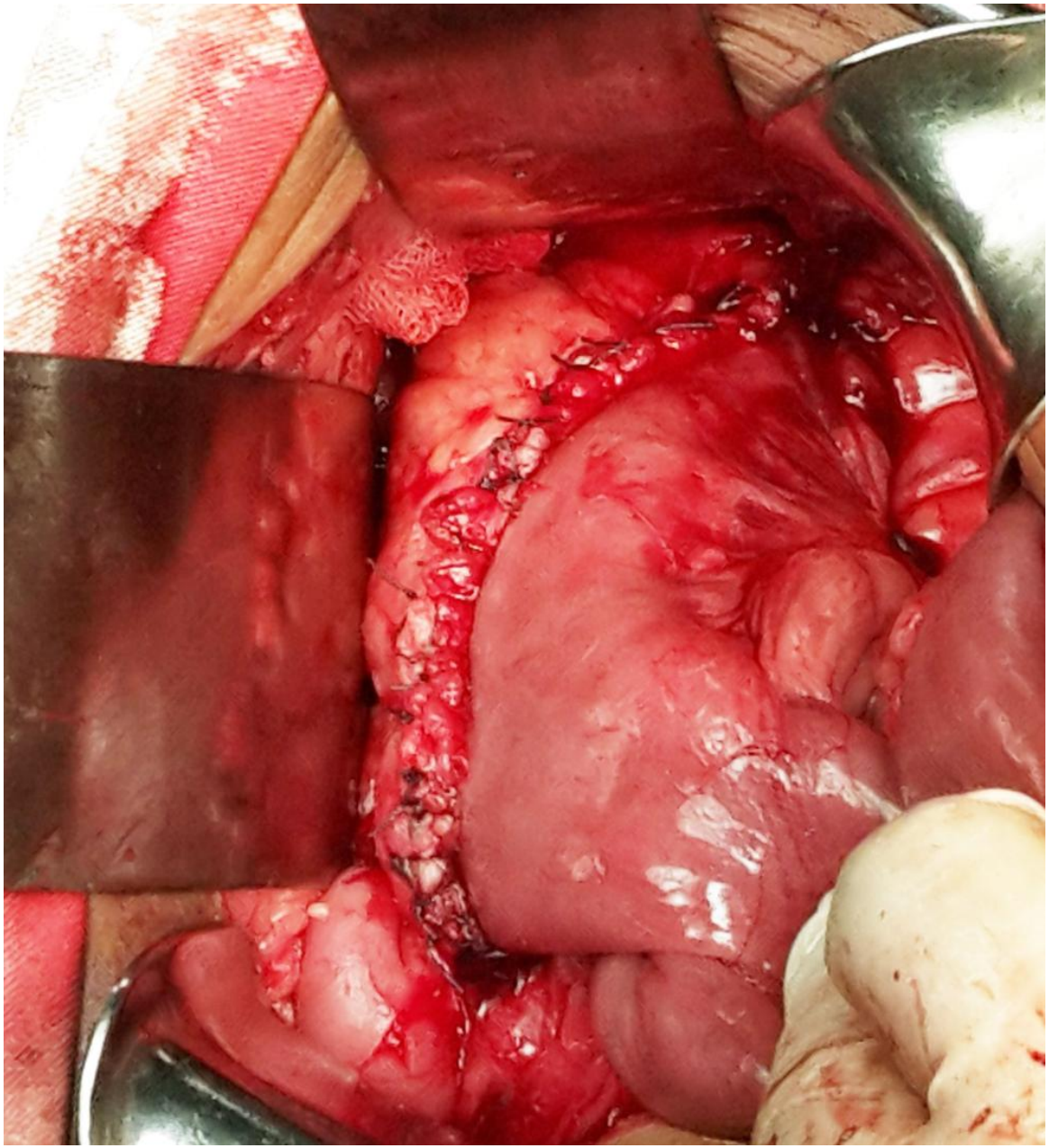


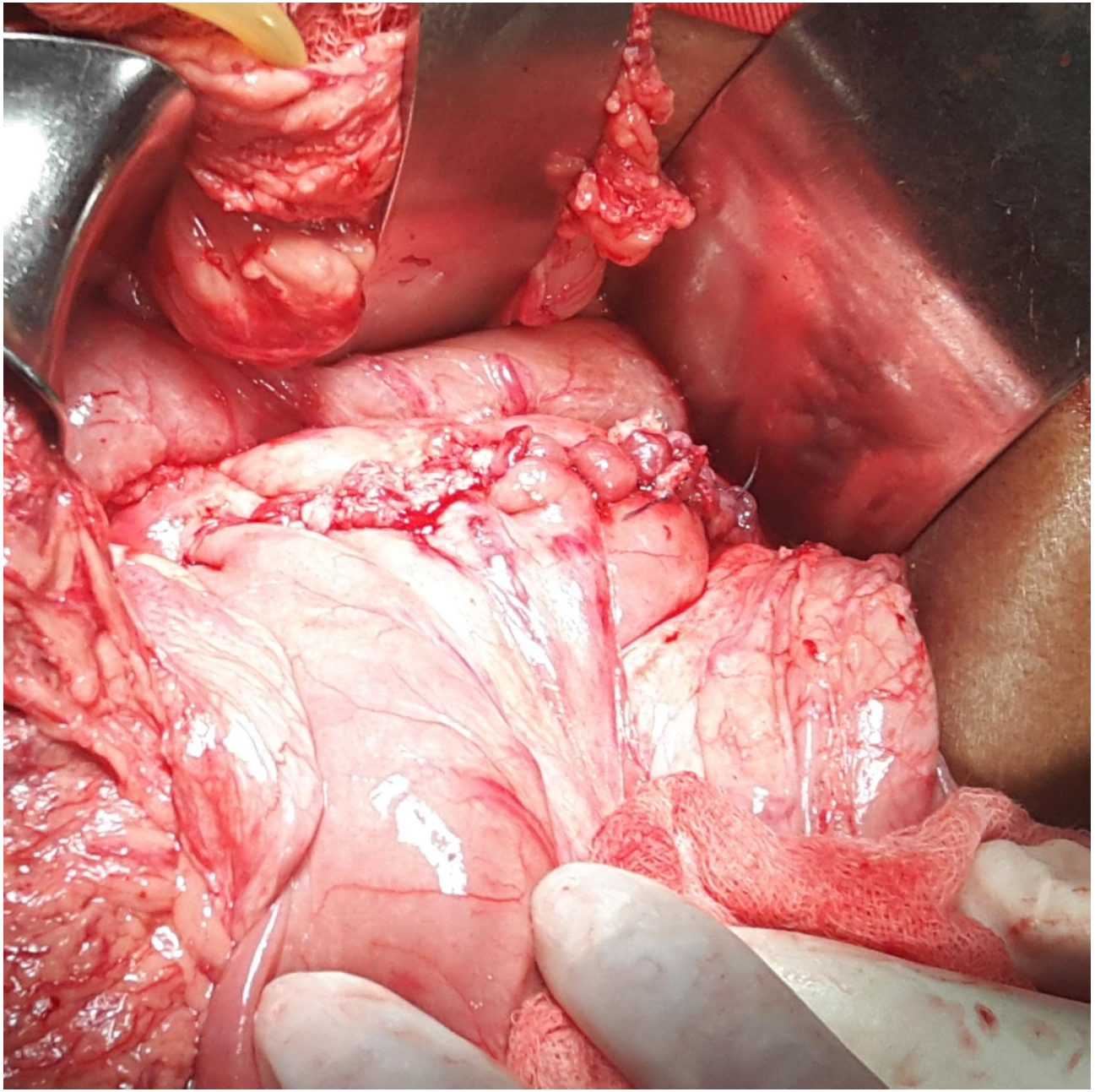


Pancreatic duct cleared









Conclusion

Successful removal of pancreatic duct stones and drainage of the pancreatic duct can reduce pain and improve pancreatic function in majority of patients. Patient with chronic calcific pancreatitis and diabetes are unlikely to have favorable outcome even after decompressive surgery. CT scan, MRCP or frozen section biopsy should be done to exclude pancreatic carcinoma before doing decompressive surgery.

Conclusion

- Puestow operation achieves good control of pain
- Progress of early pancreatitis is probably slowed own.
- Can prevent further stone formation if done early.
- Established DM, severe chronic. pancreatitis and mal-absorbtion remain unchanged


THANK YOU
sew
much!

Thank You