

A STUDY ON ADJUVANT HEAD CORING IN PATIENTS UNDERGOING LONGITUDINAL PANCREATICOJEJUNOSTOMY AND ITS AID IN PAIN REDUCTION IN CHRONIC PANCREATITIS

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ABSTRACT

BACKGROUND

The condition manifests as recurrent intractable abdominal pain.¹ This is the most important indication for surgical procedures. The pain is caused by increased pancreatic parenchymal and ductal pressure. Another cause is that chronic inflammation of the pancreas may lead to fibrosis of the peripancreatic capsule and perilobular parenchyma, which impairs local and regional blood flow, therefore causing pain through tissue ischaemia and acidosis.² This is the rationalisation behind adding the head coring to the decompression surgeries that had been classically in practice.

METHODS

This is a retrospective study. The study period spans over from January 2003 to December 2013, which is a 10-year period. Patients with intractable and non-relenting abdominal pain and a diagnosis of chronic pancreatitis with evidence of fibrosis of head of pancreas in imaging studies were included. 35 patients were randomly allocated for Head coring and LPJ by lottery method. The patients were analysed for duration of surgery, hospital stay, operative/postoperative complications and assessment of postoperative pain relief. Pain relief was assessed as complete (No analgesic required), satisfactory (Tolerable pain with normal daily activities) and unsatisfactory (Hospitalisation and hampered daily activities).

RESULTS

Alcohol consumption (65.71%) was the main cause of pancreatitis in the study group, followed by gallstones (14.28%) and idiopathic (20%) cause. Head coring (120 minutes) takes a median operative time of 30 minutes more when done adjuvant to LPJ (90 minutes). Incidence of complications were comparable in both the surgeries. The common complications of prolonged ileus and wound infection are in the percentage of 12.5% in only LPJ and 15.78% in adjuvant head coring surgeries. Pain relief was good when the complete and satisfactory groups were compared. But there is not much of difference in unsatisfactory group comparison.

CONCLUSION

A 30 minutes operative time is increased if an adjuvant head coring was done with LPJ. The head coring is a safe procedure as both groups had comparable complication rates. But pain relief was better when an adjuvant head coring was done. Hence the surgery gives better results even if the operative time is prolonged a bit.

KEYWORDS

Chronic Pancreatitis, Longitudinal Pancreaticojejunostomy, Adjuvant Head Coring, Frey's Procedure, Partington and Rochelle's Modification, Puestow Procedure.

HOW TO CITE THIS ARTICLE: Mohanty SS, Geo Jerosh JR, Patro SK, et al. A study on adjuvant head coring in patients undergoing longitudinal pancreaticojejunostomy and its aid in pain reduction in chronic pancreatitis. *J. Evid. Based Med. Healthc.* 2016; 3(61), 3320-3322. DOI: 10.18410/jebmh/2016/716

INTRODUCTION: Chronic pancreatitis is the persistent inflammation of pancreas leading to progressive and irreversible fibrotic destruction leading to atrophy and permanent destruction of its exocrine and endocrine function. The risk factors are classified as TIGAR-O (Toxic-metabolic, Idiopathic, Genetic, Autoimmune, Recurrent and

severe acute pancreatitis, Obstructive.³) But most common aetiology is chronic alcoholism (>100 g of alcohol per day for at least 5 years.⁴)

The most common symptom is postprandial midepigastic pain radiating to back that may be relieved by sitting upright or leaning forward.⁵ The patient may also present with symptoms of exocrine or endocrine dysfunction. Radiological imaging studies ranging over ultrasonography, contrast enhanced computed tomography, endoscopic retrograde cholangiopancreatography, magnetic resonance cholangiopancreatography and endoscopic ultrasonography can detect fibrosis, calculi, duct dilatation and other changes signifying pancreatitis.⁶

Financial or Other, Competing Interest: None.

Submission 01-07-2016, Peer Review 13-07-2016,

Acceptance 22-07-2016, Published 30-07-2016.

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DOI: 10.18410/jebmh/2016/716

The treatment may be non-invasive medical-life style modification, pain killers ranging from NSAIDs to narcotics, or minimally invasive which includes endoscopic sphincterotomy and stent placement.⁷ and surgical-decompression and resection procedures. The single most important indication for surgical procedure is to relieve pain. Here, we study our experience of Frey's procedure (Subtotal coring of pancreatic head),⁸ and the Partington and Rochelle's modified Puestow Longitudinal Pancreaticojejunostomy in the pain control of chronic pancreatitis patients.⁹

AIMS AND OBJECTIVES: To compare the effectiveness of Frey's procedure and Longitudinal pancreaticojejunostomy in relieving intractable abdominal pain in patients with chronic pancreatitis and the postoperative complications of the procedures in a tertiary center in India.

MATERIALS AND METHODS: The study is based on our experience of different surgical procedures in relieving the pain which often becomes intractable. The study period extended over a period of ten years from 2003 to 2013. Thirty five patients were randomly allocated for Partington and Rochelle's modified Puestow's case of chronic pancreatitis where everything else like medical and minimally invasive procedures failed to alleviate pain abdomen were posted for surgical procedures. Cases were thoroughly investigated with serum amylase, lipase, total bilirubin, albumin, USG abdomen and CECT abdomen prior to surgery. Detailed counselling of patient and his/her attendants was done regarding the procedure and its outcomes and chance of recurrence. Parameters of the study are postoperative pain relief and complications (Intra and postoperative).

Inclusion criteria was all patients above 24 years of age and of either sex with and without ductal calculi and MPD (Main Pancreatic Duct) diameter of ≥ 7 mm and fibrosis of pancreas head parenchyma in whom pain cannot be controlled by medical means. The exclusion criteria were MPD diameter < 7 mm, gross cardiovascular abnormality, patients with splenomegaly and pancreatic malignancy. Followup schedule of our study was 2 weeks \rightarrow 3 months \rightarrow 6 months \rightarrow 1 year \rightarrow 2 years \rightarrow 3 years. The assessment was based on symptomatic pain relief, ability to pursue normal activities including job as before the onset of disease and weight gain. The data was analysed using Fisher's two tailed test using standard statistical software SPSS.

DISCUSSION: Alcohol consumption is the commonest cause of chronic pancreatitis worldwide. An ideal surgery for chronic pancreatitis should address the problem of relieving the intractable abdominal pain and pressure the remaining exocrine and endocrine functions.¹⁰ The important lifestyle modification which determines the outcome of surgery is alcohol abstinence. There is good glycaemic control and weight gain following a successful surgery and return to productive group of workforce with alcohol and drug rehabilitation. The followup period for surgery is at least three years because,

1. There are spontaneous remissions,
2. Pancreas burnout theory is that destruction of pancreas relieves of pain spontaneously. Then one would expect that following surgery, the pain may exacerbate.

The surgery for chronic pancreatitis should be tailored to the individual patient's pancreatic morphological abnormalities and timed early before the patient worsens to the condition of taking narcotics. This will correlate to the success of the surgery. The Frey and Smith method of head coring after laying open the main pancreatic duct, without breaching the posterior pancreatic capsule in head and uncinata process of pancreas does not add to any mortality or morbidity of patient but increases the success of surgery in terms of pain relief. Chronic pancreatitis can be impossible to differentiate from pancreatic carcinoma at operation. One can speculate that chronic inflammation is a factor predisposing to pancreatic malignancy. So, the whole of cored out tissue is sent for histopathological study.

It is documented that drainage procedures in cases with duct diameter ≥ 7 mm with a stoma diameter of 6 mm provide effective pain relief. Complete pain relief was achieved in 56.25% after LPJ and 63.15% after LPJ with head coring. 25% and 15.78% reported satisfactory pain relief and 18.75% and 21.05% reported unsatisfactory pain relief in Group A and Group B respectively.

RESULTS: A total of 35 patients were selected for our study on the basis of inclusion and exclusion criteria. Out of them, 16 underwent only LPJ (Group A) and 19 underwent adjuvant head coring (Group B). The commonest age group is in 4th decade. The total duration of illness was 3-5 years. The mean duration was 4 years. The commonest cause was alcoholism, which is seen in 68.75% and 63.15% in groups A and B, respectively. Other causes are shown in Table 1. There were no patients with hereditary or traumatic pancreatitis or pancreatitis due to ductal anomaly. Regarding symptomatology, 100% patients of both the groups had severe abdominal pain and it was not relieved by medical therapy.

A total of 50 patients attended the OPD with chronic pancreatitis diagnosed by ultrasonography. 15 patients had no fibrosis of head of pancreas and excluded. CECT was done to confirm the ductal size and fibrosis of head of pancreas. 29 patients showed grossly dilated MPD (≥ 9 mm).

Operative findings are as follows:

1. Pancreatitis stones/calcification was seen in 68.75% and 78.94% patients in group A & B respectively.
2. Dilated pancreatic duct was found in 100% of both groups.

There were no intraoperative complications-no intra operative blood transfusion was needed. The shortest duration of hospital stay in both groups were 9 days and the longest duration was 16 days due to pancreatic fistula, which was confirmed by drain fluid amylase estimation (> 1000 IU/L). The mean duration of hospital stay was 10 days in both groups.

The followup was done as described earlier. Two patients were lost to followup after 1 year. The median duration of followup in our study was 14 months. While assessing postoperative pain relief, the patients who were completely relieved of pain or had tolerable pain which did not interfere with daily activities were classified as satisfactory pain relief. Those still suffering from severe pain requiring hospitalisation were termed as unsatisfactory pain relief. Two patients of Group A and two patients of Group B resumed alcohol intake and experienced postoperative pain and had to take analgesics for temporary pain relief. 11 patients of group A and 14 patients of group B returned to their daily activities within a median interval of 6 months. During the period of followup, the number of diabetes increased from 5 to 6 in group A and 6 to 7 in group B. Diarrhoea and steatorrhoea were controlled due to usage of enteric coated pancreatic enzyme supplement.

CONCLUSION: The adjuvant head coring adds to a 30 minutes of surgical procedure duration. The head coring does not add to intra or postoperative complication rates. No difference in morbidity is noted in both procedures.

Pain relief is better when complete and satisfactory group is compared but not of much difference in unsatisfactory group.

Aetiology	Group A	Group B
Alcohol	11(68.75%)	12(63.15%)
Gallstone	2(12.5%)	3(15.78%)
Idiopathic	3(18.75%)	4(21.05%)

Table 1

Pain Relief	Group A	Group B
Complete	9(56.25%)	12(63.15%)
Satisfactory	4(25%)	3(15.78%)
Unsatisfactory	3(18.75%)	4(21.05%)

Table 2

Morbidity	Group A	Group B
Pancreatic Fistula	1(6.25%)	2(10.52%)
Prolonged Ileus	2(12.5%)	3(15.78%)
Wound Infection	2(12.5%)	3(15.78%)
Haemorrhage	1(6.25%)	2(10.52%)

Table 3

Followup	Group A	Group A	Group B	Group B
	Preoperative	Postoperative	Preoperative	Postoperative
Diabetes	5(31.25%)	6(37.5%)	6(31.57%)	7(36.84%)
Alcohol Use	11(68.75%)	2(12.5%)	12(63.15%)	22(10.52%)
Body Weight	56 KG	58 KG	55 Kg	58 KG
Normal Activity	None	11 Patients in 6 Months (68.75%)	None	14 Patients in 6 Months (73.68%)

Table 4

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