

RESEARCH ARTICLE

EFFECTIVENESS OF PROXIMAL SPLENORENAL SHUNT IN THE TREATMENT OF COMPLICATIONS OF PORTAL HYPERTENSION AND HYPERSPLENISM.

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..... Manuscript Info

Abstract

..... Manuscript History Objective: Surgical portosystemic shunts are effective for treating rebleeding from esophageal and gastric varices and improvement in the Received: 14 May 2018 thrombocytopenia and leukopenia in patients with portal hypertension Final Accepted: 16 June 2018 with well preserved liver function. Published: July 2018 Materials and methods: 8 patients (4 male and 4 female) who received splenorenal shunts for the indication of varices bleeding and Keywords:hypersplenism from September 2015 to November 2017. Their etiology Extrahepatic vein portal obstruction(EHPVO), Noncirrhotic of portal hypertension, associated treatments and clinical outcomes portal fibrosis (NCPF), Proximal were reviewed. splenorenal shunt(PSRS), Varices Results: All patients received PSRS, were examined for median bleeding, Hypersplenism.

follow-up of 7-24 months. No postoperative encephalopathy or major complications. Late rebleeding which occurs in esophageal varices, occurred in one patient who was managed by using endoscopic treatment.

Conclusion: Proximal splenorenal shunt is an effective treatment method for rebleeding in esophagealvarices, gastric varices and for improvement in over all blood cell counts.

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Introduction:-

In general splenorenal shunt for portal decompression is generally applied to treat repeated episodes of esophageal and gastric variceal bleeding that is not amenable to medical or endoscopic therapies. Principle behind the selective portosystemic shunting is that selective deviation of venous blood from esophagogastrosplenic area to systemic circulation, this concept was developed in the 1960s by warren et al[1]

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Material and methods:-

Between September 2015 and November 2017, 8 patients under went proximal splenorenal shunt in Rajiv Gandhi government general hospital, Chennai for surgical management of hypersplenism and recurrent esophageal and gastric variceal bleeding. All patients underwent splenectomy.All underwent detailed clinical,laboratory, upper gastrointestinal endoscopy and ultrasound abdomen examination to determine variceal type, spleen size, perioperative complications and late rebleeding and long outcomes. Descriptive analyses of the data were performed using Microsoft excel sheet[table 1]

| Table | 1 |
|-------|---|
|-------|---|

| Sr | AG | GEND | ETHIOLO | SURGICAL INDICATION | OPERATION | COMPLICA | LATE |
|----|----|------|---------|---------------------|-------------|----------|---------|
| Ν | E | ER | GY | | | TION | REBLEED |
| 0 | | | | | | | ING |
| 1 | 16 | MALE | EHPVO+ | HYPERSPLENISM,NONB | OPEN | NO | NO |
| | | | PHT | LEEDER | SPLENECTOMY | | |
| | | | | | +PSRS | | |
| 2 | 18 | MALE | EHPVO+ | HYPERSPLENISM, BLEE | OPEN | NO | YES |
| | | | PHT | DER | SLENECTOMY+ | | |
| | | | | | PSRS | | |
| 3 | 23 | FEMA | EHPVO+ | HYPERSPLENISM, BLEE | PSRS | NO | NO |
| | | LE | PHT | DER | | | |
| 4 | 29 | FEMA | NCPF+P | HYPERSPLENISM,NONB | PSRS | NO | NO |
| | | LE | HT | LEEDER | | | |
| 5 | 27 | FEMA | EHPVO+ | HYPERSPLENISM,NONB | PSRS | NO | NO |
| | | LE | PHT | LEEDER | | | |
| 6 | 21 | MALE | NCPF+P | HYPERSPLENISM, BLEE | PSRS | NO | NO |
| | | | HT | DER | | | |
| 7 | 28 | FEMA | NCPF+P | HYPERSPLENISM, BLEE | OPEN | NO | NO |
| | | LE | HT | DER | SPLENECTOMY | | |
| | | | | | +PS | | |
| | | | | | RS | | |
| 8 | 9 | MALE | EHPVO+ | HYPERSPLENISM,NONB | PSRS | NO | NO |
| | | | PHT | LEEDER | | | |

Operative techniques:-

Under general anaesthesia, reverse makuuchi incision made. liver examined for any evidence of macroscopic cirrhosis, spleen found to be grossly enlarged and adherent to diaphragm & left lobe of liver in all cases. Multiple splenorenal collaterals were seen. splenic vein was dilated and tortuous in all cases. The vascular pedicle of the spleen ligated with 2-0 silk. Spleen is dissected from the attachments of diaphragm and left lobe of liver, splenic vein identified and ligated close to spleen. Splenectomy done.

Splenic veinmobilised proximally for length of 6 cm after ligating collaterals. Left renal vein dissected proximally for a length of 3 cm. After taking proximal and distal control of veins, patient was heparinised with 5000 units of UFH. Side occluding satinsky vascular clamp was applied to the left renal vein. Venotomy made in the left renal vein and end to side anastomosis done using 6-0 prolene.



Figure 1:-Hypersplenism and preparing for splenectomy.



Figure 2:-splenic vein and left renal vein preparing for anastomosis



Figure 3:-splenorenal anastomosis



Figure 4:-post operative follow up

Results:-

8 patient were involved in the study, including 3 men,4 women and one pediatric patient. Mean age of the adults was 23.1 years. Causes of the hyperslpenism in 5 patients was extrahepatic portal vein obstruction and remaining patients was non cirrhotic portal fibrosis. 4 patients had at least one episode of rebleedingosephageal/gastric varices after first endoscopic treatment. All patients who underwent open slpenectomy and proximal splenorenal shunt had good improvement in white blood cell and platelet counts, in the immediate post operative period[table 2].

There was no 30 days or in hospital mortality in any of these patients. Post operatively no symptoms and signs of hepatic encephalopathy, hepatic insufficiency, shunt occlusion, pancreatic leakage was noticed. Except for minor wound infections, no major post operative complications occurred. Rebleeding from varices occurred in one patient and was managed with endoscopic ligation. Most patients were under regular follow up with Doppler ultrasound to look for the patency of the shunt. One patient was lost to follow up.

| Sr | AGE | GENDER | FOLLOW UP | Pre-OP | Post-OP | Pre-OP | Post-OP |
|----|-----|--------|-----------|--------|---------|----------|----------|
| NO | | | in MONTHS | WBC | WBC | PLATELET | PLATELET |
| | | | | x 103 | x103 | x 103 | x 103 |
| 1 | 16 | MALE | 24 | 1.8 | 11 | 51 | 140 |
| 2 | 18 | MALE | 20 | 2 | 12 | 54 | 134 |
| 3 | 23 | FEMALE | 14 | 2.1 | 10 | 10 | 123 |
| 4 | 29 | FEMALE | - | 2 | 9 | 63 | 120 |
| 5 | 27 | FEMALE | 11 | 11 | 11.2 | 35 | 142 |
| 6 | 21 | MALE | 7 | 6.5 | 9.7 | 350 | 408 |
| 7 | 28 | FEMALE | 9 | 2.5 | 9.6 | 43 | 145 |
| 8 | 9 | MALE | 7 | 2.1 | 10 | 48 | 132 |

Table 2

Discussion:-

EHPVO and NCPF constitute 20-30% of cases of portal hypertension in developing countries like India [3]. The majority of patients with these conditions present with variceal bleeding [4], hypersplenism, growth failure and ectopic varices. Shunt surgery is a safe and effective procedure that not only prevents variceal bleeding but also takes care of other morbidities associated with EHPVO/NCPF [2]. A proximal splenorenal shunt procedure is advantageous because it avoids the need for a prosthetic graft, does not violate the porta and the right upper quadrant, is more effective in relieving any associated hypersplenism, [5] and also in controlling ascites[6].

Most of the previous studies used clinical methods like Doppler USG or angiography to evaluate shunt patency [2-4]. Reduction in grade of oesophagealvarices was thought to be a good predictor of shunt patency [7]. This is not reliable because of spontaneous fluctuations in variceal size and reduction in flow due to splenectomy.

Conclusion:-

Our study shows that the long term benefits of proximal splenorenal shunts and open splenectomy in patients with EHPVO and NCPF for preventing variceal bleeding and for alleviating thrombocytopenia and leukopenia. Improvements in endoscopic treatments of esophageal varices have led to a reduction in the need of the surgery. However ,since the greatest risk to patients with EHPVO and NCPF is variceal bleeding , proximal splenoreanl shunt and open splenectomy is the best long term prophylaxis against variceal bleeding, and should be considered as treatment for EHPVO and NCPF patients.

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