

Surgery for Bleeding Esophageal Varices

Pages with reference to book, From 6 To 9

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Abstract

A total of 72 patients were operated for bleeding esophageal varices over five years. Cause of portal hypertension was cirrhosis in 33, Schistosomal fibrosis in 23 and a combination of the two diseases in 3 cases. Biopsy was not available in 13 patients. Fifty-eight patients were child grade A and B, while 14 patients were grade C. Overall, there were 16 hospital deaths (22.2%) and 28 patients had complications (38.8%). Specifically, Hassab's operation was done in 40 patients with 12.5% mortality and 11.7% incidence of rebleeding. Hassab's operation plus esophageal transection in 13 patients was associated with 46.1% mortality and no incidence of rebleeding. Warren's splenorenal shunt, done in 11 patients, was accompanied by 1 (9%) death and no incidence of rebleeding. Mortality rate increased significantly when esophageal transection was added to Hassab's operation. It is concluded that for low risk patients being operated electively, Warren's shunt is an acceptable alternative to Hassab's operation which is better suited to emergency situations. Esophageal transection should not be added to Hassab's operation because this increases the mortality (JPMA 45:6,1995).

Introduction

Portal hypertension (PH) is common in Saudi Arabia because of the high incidence of hepatitis¹ and Schistosomiasis². Bleeding from esophageal varices (BEV) is a dreaded complication of PH. Operations for BEV have been associated with mortality as high as 60%³ and morbidity around 40%⁴. Studies from the Western hemisphere suggest that sclerotherapy should be the initial management of these patients^{5,6}. Nonetheless, about half of these patients will rebleed on sclerotherapy^{5,6} and will require 'rescue surgery' to control their bleeding. Moreover, sclerotherapy has not been successful in controlling fundal varices. There is no general agreement on the type of surgery to be performed on these patients. Basically operations to stop bleeding and prevent rebleeding in PH patients are either designed to devascularise the lower esophagus and stomach or they attempt to shunt blood away from the high pressure portal circulation to systemic veins. Because of considerable difference in patients' populations with varying etiologies of PH in different parts of the world, care has to be taken to translate the results of treatment for BEV from one society to the other⁷. The purpose of this study is to present the experience of surgical management and outcome for bleeding esophageal varices patients in Asir Central Hospital (a tertiary care facility affiliated with College of Medicine Abha, Saudi Arabia).

Patients and Methods

All patients aged above 12 years operated for BEV from August, 1988 to October, 1993 were included. Data was especially collected regarding the type of liver disease as well as Child's grade. The patients were divided into three main groups, which were Hassab's operation, Hassab's operation combined with esophageal transection and Warren's shunt. The patients in the three main groups were comparable with regards to age and sex and the type of liver disease (Table I).

Table I. Patient characteristics.

	Hassab's operation	Hassab's operation +Esophageal transection	Warren's shunt	Miscellaneous operations	Total
No. of Patients	40	13	11	8	72
Median Age (Years)	39	42	31	46	39
Sex					
Male	33	12	9	7	61
Female	7	1	2	1	11
Histopathology					
Cirrhosis	15*	6	6	6*	33
Schistosomiasis	14	3	4	2	23
Combined cirrhosis and Schistosomiasis	1	1	1	0	3
Not available	10	3	0	0	13
Child grade					
A	16	4	8	2	30
B	18	5	3	2	28
C	6	4	0	4	14
Emergency operation	31	10	1	8	50
Elective operation	9	3	10	0	22

*Two patients in each of Hassab's operation and Miscellaneous groups had hepatocellular carcinoma superadded to hepatic cirrhosis.

Eight patients who did not fall in the above three groups were grouped as a miscellaneous group. Hassab's operation involved devascularisation of lower esophagus and upper stomach and splenectomy as described by Hassab⁸. Hassab's operation and esophageal transection (ET) was a transabdominal devascularisation similar to the above with addition of transection and anastomosis of esophagus using EEA stapler. Warren's shunt consisted of anastomosis of distal splenic vein to left renal vein as described by Warren et al⁹. No attempt was made to achieve a complete splenopancreatic disconnection. The proportion of deaths for the three types of operations were analyzed by using Chi-square, Z-test of proportions and Fisher's Exact tests at 5% level of significance.

Results

Seventy-two patients were operated for BEV. This included 61 males and 11 females with a median age of 39 years (range 14-70 years). All patients were treated initially with sclerotherapy and surgery performed when this therapy failed or patient was noted to have fundal varices. Thirty patients had Child's grade A, while 28 and 14 were grade B and C respectively. Histopathology of liver showed cirrhosis in 33 and Schistosomiasis in 23 patients. Three further patients had combined cirrhosis and Schistosomiasis and four patients with cirrhosis had superadded hepatocellular carcinoma. Unfortunately 10 patients from Hassab's operation group and three patients from Hassab +OT group did not have liver biopsy. No patient volunteered history of alcohol intake. Forty patients had Hassab's operation alone, 13 had Hassab's and ET and 11 had Warren's shunt. Of the remaining patients, 3 had under-running of varices, two had unsuccessful attempts at portacaval shunt, one each had splenectomy alone and esophageal transection alone. One patient died on table from bleeding before any operation: Only one patient from Warren's shunt group had emergency operation, while 66% patients in the other two main groups had emergency procedures. Deaths and important complications following the three common operations are outlined in Table II.

Table II. Deaths and complications.

Operation	Total No. of patients	Hospital deaths	Continued bleeding	Rebleeding during follow up	Encephalopathy	Other complications
Hassab's operation	40	5	2*	4(2*)	3(2*)	2 subphrenic abscess 1* renal failure
Hassab's operation + Esophageal transection	13	6	4*	0	2(1*)	2 esophageal stricture 1 subphrenic abscess 1* renal failure
Warren's shunt	11	1	0	0	0	1* renal failure 1 incisional hernia
Miscellaneous	8	4	3*	0	1*	0
Total	72	16	9	4	6	9

*Fatal complications

Mortality was significantly increased ($Z=2.28$, $P<0.05$) when esophageal transection was added to Hassab's operation (Table III).

Table III. Relationship of mortality to Child's grading for Hassab's operation and Hassab's operation + transection.

Risk	Operation	Total number of patients	Deaths (%)	Statistical analysis
Low risk Child's grade A+B	Hassab's operation	34	3 (8.8)	$Z=2.06$ $P<0.05$
	Hassab's op. + transection	9	4 (44.4)	
High risk Child's grade C	Hassab's operation	6	2 (33.3)	$P=0.86$ (Fisher's exact test)
	Hassab's op. + transection	4	2 (50.0)	
Total	Hassab's operation	40	5 (12.5)	$Z=2.1$ $P<0.05$
	Hassab's op. + transection	13	6 (46.2)	

Of the six patients who died following Hassab and ET, four died from continued bleeding, one from a confirmed esophageal leak and one developed multiple problems which included sepsis from suspected esophageal leak. Overall 28 patients (38.8%) had complications. Commonest complication was failure of the operation to stop bleeding resulting in death of nine patients in which it occurred. Renal failure in 3 patients was also fatal. Sixteen patients (22.2%) died following operations within 30 days of admission (Table IV).

Table IV. Detail of hospital deaths.

S. No.	Age	M=male F=female	Child grade	Elective/ Emergency	Type of operation	Cause of death
1	45	F	A	Elective	Hassab	Continued bleeding
2	58	M	A	Elective	Warren	Sepsis and renal failure
3	57	M	A	Emergency	Hassab+Transection	Continued bleeding
4	70	F	B	Emergency	Hassab	Renal failure
5	30	M	B	Emergency	Hassab+Transection	Continued bleeding
6	60	M	B	Emergency	Hassab+Transection	Esophageal leak + Renal failure
7	38	M	B	Emergency	Hassab+Transection	Continued bleeding
8	53	F	B	Emergency	Hassab	Continued bleeding
9	30	M	C	Emergency	Hassab	Hepatic failure
10	56	M	C	Emergency	Hassab	Hepatic failure
11	60	M	C	Emergency	Hassab+Transection	Continued bleeding
12	56	M	C	Emergency	Hassab+Transection	Suspected esophageal leak +Hepatic failure
13	70	F	C	Emergency	Underrunning of varices	+Hepatic failure
14	46	M	C	Emergency	Attempted porta- caval shunt	Continued bleeding
15	40	M	C	Emergency	Attempted porta- caval shunt	Continued bleeding
16	48	M	C	Emergency	Died on table before operation	Continued bleeding

Mortality in 58 patients with low risk Child grade A and B disease was 15.5% and rose to 50% in high risk patients with Child grade C liver disease ($X^2=7.82$, P

Discussion

Surgical management of BEV remains both frustrating and challenging. An operation for BEV has to be judged from triple aspects of mortality, incidence of rebleeding and hepatic encephalopathy. Although Hassab's operation and Warren's shunt had comparable mortality in the low risk Child A and B patients (3/34, (8.8%) and 1/11 (9.0%) respectively). When esophageal transection was added to Hassab's operation, mortality even in low risk patients was prohibitive (4/9, 44.4%). Esophageal transection is known to be associated with high mortality⁴. Although Suigura et al¹⁰ and Johnston¹¹ have reported 5.2% and 14% mortality following esophageal transection respectively, it has ranged from 35% to 60% in other reports¹²⁻¹⁵. Transection of esophagus following sclerotherapy has a high incidence of leakage from esophagus¹⁵ and as noted by Zhang¹⁶, in a controlled prospective comparison of Hassab's operation with and without esophageal transection, it increases early morbidity without any long term benefit. Rebleeding (4/34= 11.7%) was only noted following Hassab's operation. Two of these patients were successfully treated by sclerotherapy. Sakai et al¹⁷ showed that sclerotherapy was effective in the control of rebleeding in 97.3% of the patients in the group who had previous portal hypertension surgery and in 72.7% of those without previous portal hypertension surgery. Encephalopathy occurred mainly in Child C patients following devascularisation procedures. Our initial experience with Warren's shunt is encouraging. No patients developed encephalopathy following Warren's shunt. On the other hand, Stauss et al¹⁸ from Brazil have reported 14.8% patients, developing encephalopathy after Warren's shunt. Ezzat et al¹⁹ reported clinical encephalopathy in 15% patients after Warren's shunt but when they looked at Schistosomial portal fibrosis subgroup of patients, the incidence was only 4.4%. The short followup period may have been the reason for the low incidence of encephalopathy in our patients since Ezzat et al reported the mean duration for onset of encephalopathy as 32±23 months. Warren's shunt is a technically demanding procedure unsuitable for use in an emergency situation. In contrast, Hassab's operation can be done with less difficulty in an

emergency. Based on the findings from this study, it is recommended that for a relatively low risk patient being operated electively, given the expertise, Warren's shunt is an appropriate operation because of acceptable morbidity and mortality. If the same patient is being operated as an emergency, Hassab's operation should be chosen because of acceptable efficacy and relative ease of performance. Special attention should be paid to correct, if possible any disturbed coagulation parameters. An ideal operation for a poor risk patient, who is bleeding in spite of sclerotherapy, has yet to be found. Addition of esophageal transection increases the mortality significantly and although there is an increased incidence of rebleeding if the esophagus is not transected, sclerotherapy may be useful in this situation as we found in two of our patients. Recognition of the need for further study of this problem has led to the formation of Asir Portal Hypertension Study group and Asir Portal Hypertension registry.

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