RESULTS AND DATA ANALYSIS

R E S U L T S

Incidence of "Portal Vein Thrombosis":

Among the 30 chronic liver diseased patients who underwent splenectomy with or without devascularization operation 11 cases of portal vein thrombosis (or one of its tributaries) were detected giving a total incidence of 36.66%.

In group (1) (17 cases) [which represent the group of patients whose portal veins proved to be patent sonographically pre-operatively] 5 cases were found to have P.V.Th post-operatively giving an incidence of 29.4%. This includes the 2 patients who underwent physiological splenectomy plus devascularization and one of them have got P.V.T. post-operatively. If these 2 cases were excluded the incidence becomes 26.67% (i.e 4 out of 15).

This incidence represents the incidence which occured during the first post-operative month i.e, directly related to the operation. In group (II) (13 patients), 6 patients were found to have thrombosis of the portal vein or one of its tributaries making an incidence of 46.15%.

Signs and Symptoms analysis :

In group (1), P.V.Th was found to occur in the post-operative period during the first month. It wasn't harmful to the patients and it occurred as a nearly asymptomatic process. It was discovered only by sonographic examination, although there was some complaints. One of the five P.V.T. patients complained of vague abdominal pain at the 3rd post-operative day. Two patients showed a sudden unexplained 0.5:1°C rise in temperature post-operatively one on the 3rd and one on the 5th post-operative days and in the 1st patient it was associated with rigors and sweating. Another patient showed a rise in temperature post-opertively but was found to be associated with subphrenic collection.

It should be mentioned that the rise in temperature is a quite common event post-operatively and of the rest 12 patients who didn't have P.V.T. (5) patients showed a rise in temperature of more than 0.5°C which couldn't be explained in 3 of them. Also a vague abdominal pain cann't be trusted as a diagnostic symptom especially post-operatively in major abdominal operations. Also one of the 5 P.V.Th. patients showed an unexplained pitting oedema in both lower limbs.

P.V.T & the Laboratory Data

In a trial to correlate P.V.T with pre & post operative data it was found that:

P.V.T in relation to platelet count:

No significant difference in pre operative platelet counts between P.V.T & non P.V.T patients. (table 1).

Pre Op Gp.I	Mean	S.D.	No.	T	P
Non P.V.T.	79.8333	28.8376	12		
				1.5389	0.0723
P.V.T	58.8000	13.6272	5		

Table (1): Pre-operative platelet count in group I.
(S.D. = Standard deviation. P = Probability).

There was significant post operative rise of platelets as compared to pre-operative values both in P.V.T & non P.V.T patients in group I.

	Mean	S.D.	No.	T	P
Pre	79.8333	28.8376	12		
				- 4.421	1.079E-04.
Post	279.8333	154.0335	12		

Table (2): Rise in platelets post operatively in non P.V.T patients group I.

	Mean	S.D.	No.	T	P
Pre	58.8	13.6272	5		
				- 4.6438	5.548 E-04
Post	332.0	130.8434	5		

Table (3): Rise in platelets post-operatively in P.V.T patients group I.

There was no significant difference between P.V.T & non P.V.T patients platelet counts post operatively (group I alone then in group II then in group I & group II together).

	Mean	S.D	No.	T	P
Non P.V.T group I&II	239.7368	142.2396	19		
P.V.T group I&II	268.2300	141.4266	10	- 5137	.3058

Table (4): Post-operative platelet counts difference beween P.V.T & non P.V.T (all patients).

	Mean	S.D	No.	T	P
Non P.V.T group I	279.8333	154.0335	12	.661	.4269
P.V.T groupI	332.0	130.8434			

Table (5): Post-operative platelet counts difference between P.V.T & non P.V.T (group I).

	Mean	S.D	NO.	T	P
Non P.V.T group II	171.0	92.0344	7	.9213	.1893.
P.V.T group II	242.26	175.821	5		

Table (6): Post-operative platelet counts difference between P.V.T & non P.V.T patients (group II).

WBCs & RBCs.

The same results found with platelets were found with W.B.Cs & R.B.Cs concerming the difference between P.V.T & non P.V.T patients ie No significant difference.

However it should be noted that the rise post-operatively was less in W.B.Cs & much less in R.B.Cs.

	Mean	S.D	No.	T	P
Pre	5.35	3.4932	12		
				- 3.3277	1.527 E-03.
Post	10.3333	3.8351	12		

Table (7): Rise in WBCs post-operatively in non P.V.T patients group I.

	Mean	S.D	No.	T	P
Per	3.000	1.8262	5		
				- 4.958	5.58 E-04
Post	10.68	2.9431	5		

Table (8): Rise in WBCs post-operatively in P.V.T patients group I.

	Mean	S.D	No.	T	P
Non P.V.T	7.58	2.3124	12		
				1.4802	.0798
P.V.T	10.3333	3.8351.	5		

Table (9): Post-operative WBCs count difference between P.V.T & non P.V.T patients (group I).

	Mean	S.D	No.	T	P
Non P.V.T	10.68	2.9431	7	1.0249	.1648.
P.V.T	8.2286	4.6942	5		

Table (10): Post-operative WBCs count diference between P.V.T & Non P.V.T patients (group II).

As regards prothrombin concentration there was no significant difference neither post-operatively nor between P.V.T & non P.V.T patients.

Concerning the degree of varices, there was a reduction in the mean degree of varices, in the whole group post-operatively. But there was no significant difference between the P.V.T & non P.V.T patients.

	No	Pre	Post	Reduction	Reduction %
Non P.V.T	12	2.5 ±1.5	1.9 ± 1.1	0.6	24%
P.V.T	5	2.4 ±0.89	1.8 ± 0.84	0.6	25%

Table (11): Degree of varices pre & Post operatively in P.V.T & non P.V.T patients group I.

Summary of Results:

A significant rise between pre & Post operative platelets & WBCs counts in group I.

No significant difference in preoperative platelet counts between P.V.T. and non P.V.T. patients in group I .

No significant difference in any of the counts or tests between P.V.T & non P.V.T patients in either group .

	Patients No.	preoperative					postoperative					
		Platelets x 1000	WBCs x 1000	RBC x 1000000	Prothro. %	Degree of varices	Platelets x 1000	WBCs x 1000	RBCs x 1000000	Prothro. %	Degree of varices	Hist. of Haemat.
PVT	1	50	2.2	3.5	65	3	350	12.5	4.5	56	1	+ve
	2	75	6.2	3.4	60	3	400	10.3	4.0	57	2	-ve
	3	68	1.9	3.3	58	3	450	7.7	5.8	60	2	-ve
	4	41	1.9	4.4	35	1	110	14.7	5.4	62	1	-ve
	5	60	2.8	3.8	73	3	350	8.2	4.2	70	2	-ve
NON PVT	6	70	9.8	4.2	85	4	135	6.4	4.6	70	3	-ve
	7	97	13.0	5.4	58	3	170	10.0	5.4	59	3	+ve
	8	70	3.6	4.4	41	2	461	5.8	3.5	68	3	-ve
	9	107	1.9	4.5	75	4	200	16.2	3.9	70	3	+ve
	10	50	1.7	2.9	52	3	600	13.9	4.2	56	2	+ve
	11	100	4.4	5.8	58	2	150	9.5	5.4	55	1	-ve
	12	90	5.3	4.2	65	2	210	7.2	4.4	63	2	-ve
	13	70	7.2	3.5	59	2	180	6.7	4.6	58	1	-ve
	14	27	2.6	45.0	59	2	400	12.0	6.6	85	1	-ve
	15	100	7.9	4.0	55	1	150	13.3	5.7	50	0	-ve
	16	130	4.3	3.3	75	1	270	7.0	3.8	74	1	-ve
	17	51	2.5	4.4	70	4	432	16.0	4.2	39	3	+ve

Table (12): Data of group I patients.

	Platlets x1000	WBCs x 1000	RBCs x1000000	Prothro %	Deg.of Varices	Hist.of Haemat.
1	207	6.5	4	50	2	+ ve
2	450	11.5	3.11	65	4	+ ve
3	250	3.6	3.1	56	4	- ve
4	370	7.8	4	60	2	+ ve
5	194	5.8	3.6	66	4	+ ve
6	47	3.7	4.7	100	2	- ve
7	150	7.6	3.5	52	4	+ ve
8	170	18.4	2.4	2	1	+ ve
9	150	7.6	4.4	75	2	+ ve
10	350	6.3	3.5	54	1	+ ve
11	130	6.4	3.4	60	3	+ ve
12	200	7.6	4	54	4	+ ve

Table (13): The data of group II patients.

(One patient was excluded because of incomplete data).

Descriptive statistics:

No.	Name	No.	Mean	STD.DEV.	Minimum	Maximum
1	Platelet	19	239.7368	142.2396	47.0000	600.0000
2	WBC	19	9.5579	4.1739	3.7000	18.4000
3	RBC	19	4.3263	.9683	2.4000	6.6000
4	Prothrom	19	63.2632	14.3907	39.0000	100.0000
5	Protien	19	7.2842	.8713	5.9000	9.0000
6	Bilirubin	19	1.0579	.6158	.2000	3.0000
7	Endoscop	19	2.1053	1.1496	.0000	4.0000

Table (14): Statistical data of Non P.V.T patients post operatively (All patients).

No.	Name	No.	Mean	STD.DEV.	Minimum	Maximum
1	Platelet	10	268.2300	141.4266	1.3000	450.0000
2	WBC	10	9.1300	2.9826	5.8000	14.7000
3	RBC	10	4.1710	.8794	3.1000	5.8000
4	Prothrom	10	60.2600	5.8962	50.0000	70.0000
5	Protien	10	7.1600	.5621	6.5000	8.1000
6	Bilirubin	10	1.0900	.7218	.3000	3.0000
7	Endoscop	10	2.5000	1.1785	1.0000	4.0000

Table (15): Statistical data of P.V.T Patients post operatively (All Patients).

Liver Pathology

Group I:

Nine of the patients belonging to this group suffered from bilharzial liver fibrosis, 4 from hepatic liver cirrhosis and 4 from mixed liver pathology. (Bilharzial and Cirrhisis) as evidenced by wedge liver biopsy taken intra-operatively.

Group II:

Four of the patients were Bilharzial, 4 were Cirrhotics and 3 mixed liver pathology as shown by liver biopsy in 3 and pointed to by sonographic liver architecture pattern in 8 (2 were not known as regards liver pathology).

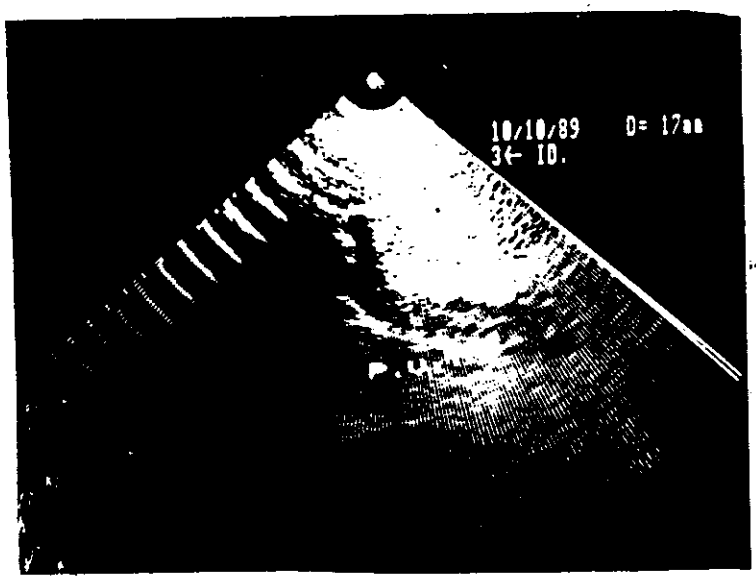
VARICES AND BLEEDING

Group I:

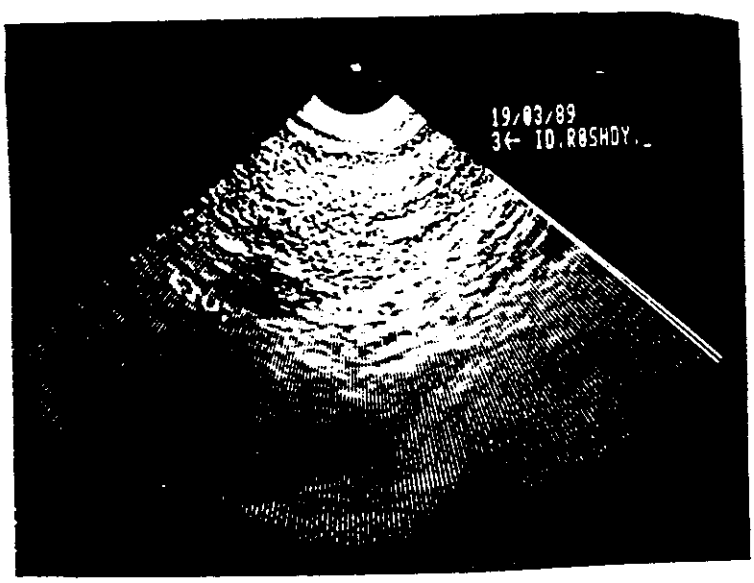
In this group: 3 patients had 4 th degree gastro-oesophageal varices, 5 had 3 rd degree, 6 had 2 nd degree and 3 had 1 st degree pre-operatively (mean, 2.47).

Group II:

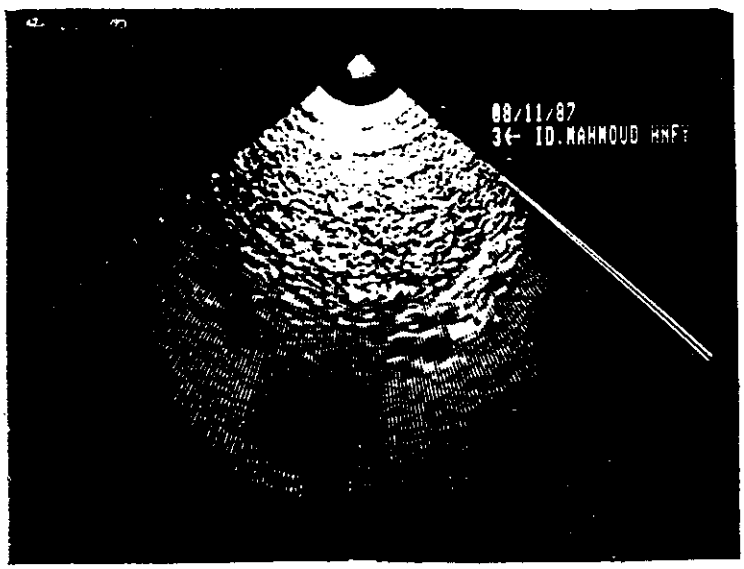
3 were non bleeders and 10 were bleeders.



Picture(1): Echogenic thrombosis of P.V. recent thrombus



Picture (2): Thrombosis of P.V. and presence of collateral at porta- hepatis.



Picture (3): Cavernous Transformation of P.V.

Picture (4): Superior mesenteric portography.
(Arterial phase)

Picture (5): Superior mesenteric portography (Venous phase)
patent portal vein.
Good perfusion.

Picture (6): Superior mesenteric portography(Venous phase).
Non Visualization of P.V.
Severe collateralization recent thrombosis is a possibility.

Picture (7): Superior mesenteric portography(Venous phase).
Non Visualization of P.V.
Severe collateralization recent thrombosis is a possibility.

Picture (8): Cavernous Transformation of P.V.