"RESULTS"

Twinty five children suffering from portal vein thrombosis and veno occlusive disease were studied in the present work. Three of them were veno occlusive disease (12%) and twinty two of the children were portal vein thrombosis (88%). Eleven of the children were males (44%) and fourteen were females (56%). Their ages ranged between 3.5 years and 12 years.

10 cirrhotic patients were studied also in this work. Their ages renged between 3-11 years 5 of them were males (50%) and 5 were females 50%.

Another group of ten healthy age and six matched served as a Control group. Eight children were females (80%) and two were males (20%). Their ages ranged between two and eleven years (Tables 1 and 2).

Table (1): the age distribution of the patients of portal vein thrombosis and veno-occlusive disease and the controls.

	Cases (No. =25)	Controls (No. =10)
Range	**3.5 – 12 years**	**2-11 years**
Mean ± SD	**6.92 ± 2.70**	**6.20 ± 2.66**
P	**> 0.05**	

Among the children with portal vein thrombosis and veno occlusive disease (25 Cases), three were inhabitants of Cairo (12%) while the remainder came from other different parts of Egypt (88%)

Table (2): table showing the six distribution of the patients of portal vein thrombosis and veno-occlusive disease and the Controls.

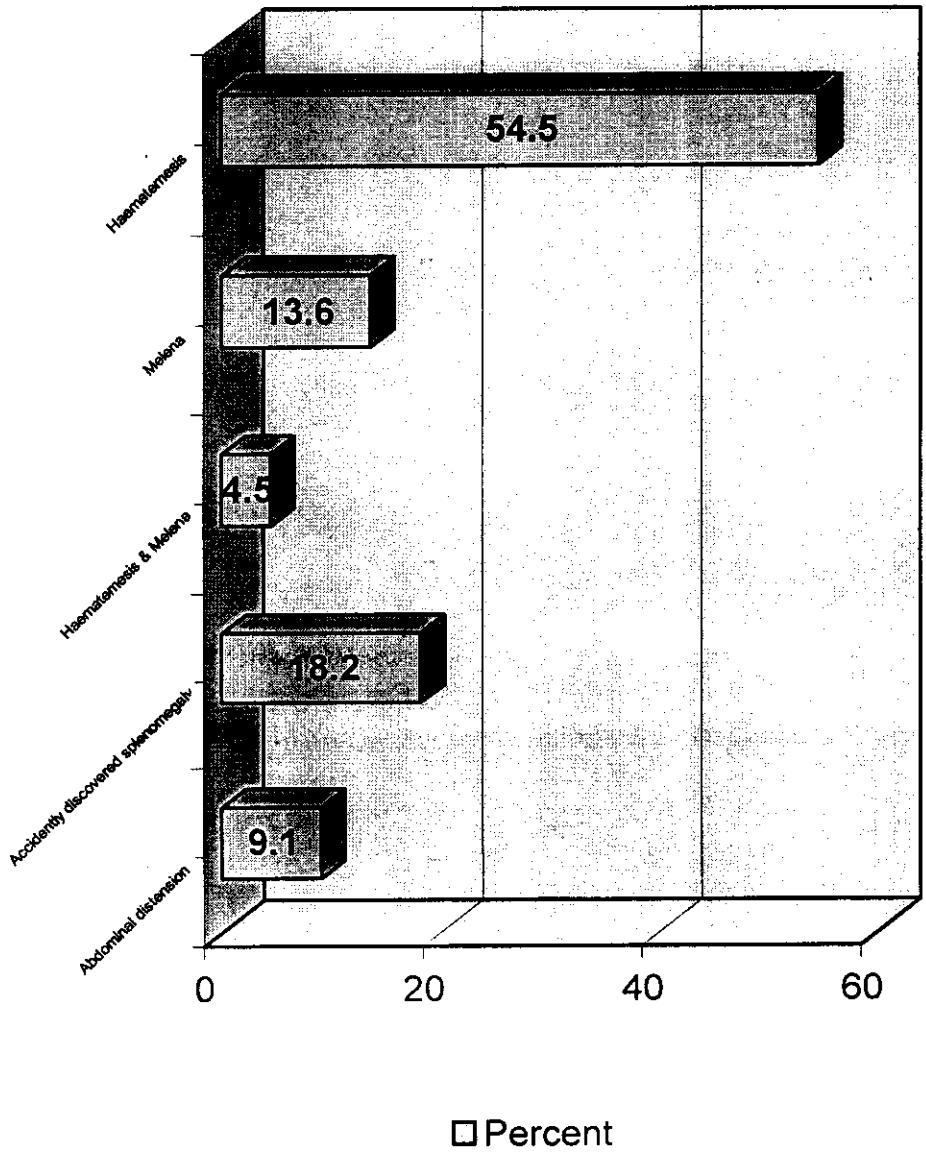
	Cases (No. = 25)		Controls (No. = 10)	
	n.	%	n.	%
Males	**11**	**44**	**2**	**20**
Females	**14**	**56**	**8**	**80**

The presenting Complaint in the majority of patients suffering from portal vein thrombosis (22 cases) was haematemesis (12 cases, 54.5%). Three of the children presented by melana (13.6%). One child had both melena and haematemesis (4.5%). Accidently discovered splenomegaly was the presenting complaint in four children (18.2%). Two children presented by abdominal distension (9.1%) (Tables 3). The age of onset varied between Iyear and 9 years

table (3):- the presenting symptoms encountered in the cases of portal vein thrombosis (22 cases).

Complaint	No. of cases	%
Haematemesis	**12**	**54.5**
Melena	**3**	**13.6**
Haematemesis and Melena	**1**	**4.5**
Accidentally discovered splenomegaly	**4**	**18.2**
Abdominal distension	**2**	**9.1**
Total	**22**	**100**

Figure 1. presenting symptoms of cases of portal vein thrombosis (22 cases)



Among the twinty two patiants of portal vein thrombosis only nine children (40.9%) had a past history of relevance to aetiology of portal vein thrombosis. Three children (13.6%) had history of umbilical catheterization during the early neonatal period-one child (4.5%) gave history of umbilical sepsis during the neonatal period. One child (4.5%) suffered from neonatal sepsis requiring hospitalization early in the neonatal period. Four children (18.2%) had history of severe gastroenteritis and dehydration (Table 4).

Table (4):- the relevant past history encountered in the cases of portal vein thrombosis (22 Cases).

Past history	No. of cases	%
Umbilical cetheterization	**3**	**13.6**
Umbilical sepsis	**1**	**4.5**
Neonatal sepsis	**1**	**4.5**
Gastroenteritis and dehydration	**4**	**18.2**
Total	**9**	**40.9**

As regard to consanguinity for all patients (25 case) of portal vein thrombosis and veno-occlusive disease, four children (16%) were consanguineous. None had history of similar condition in the family or gave history of thrombotic tendency (Table 5).

Table (5):- the relevant family history of the cases of portal vein thrombosis and veno-occlusive disease (25)

Family history	No. of caies	%
Positive consanguinity	**4**	**16**
Similar condition	**0**	**0**
Thrombotic tendency	**0**	**0**

Investigations done to the cases of portal vein thrombosis and veno-occlusive disease (25 cases) revealed a haemoglobin of 4.6-12.9

gm% with a mean of 9.68 ±1.87 gm%. RBCs count ranged between 2.8-4.6 million/cmm, with a mean of 3.70 ± 0.46 million/cmm. The total leucocytic count ranged between 3-14.5 thousand/cmm with a mean of 5.86 ± 2.76 thousand/cmm. Platelet counts ranged between 45-460 thousand/cmm with a mean of 184.36 ± 119.93 thousand / cmm. All routine liver function tests were normal in all cases (AST-ALT–serum bilirubin, serm proteins and serum albumin).Only prothrombin. Time was high in three cases (Table 6)

Table (6):- Comparison between patients of portal vein thrombosis and venoocclusive disease (25 cases) and controls (10 cases) regarding to haemoglobin, RBCs, WBCs, platelets, serum bilirubin, AST, ALT, total proteins, serum albumin and prothrombin time:-

Studied parameters	Patients of portal vein thrombosis and veno occlusive disease (25 cases). Mean + S.D	Controls (10 cases). Mean ± S.D	t.test	P.
Haemoglobin	9.68 ± 1.87	12.2 ± 1.34	3.86	< 0.01
R.B.Cs	3.70 ± 0.46	4.37 ± 0.38	4.07	< 0.01
W.B.cs	5.86 ± 2.70	6.71 ± 1.33	0.93	>0.05
Platelets	184.36 ± 119.39	230.1 ± 45.47	1.17	> 0.05
Senum bilirubin:-	0.78 ± 0.64	0.68 ± 0.18	0.47	> 0.05
Ast:-	56.79 ± 34.67	42.01 ± 8	1.32	> 0.05
ALT:-	34.63 ± 15.38	31.4 ± 6.72	0.64	> 0.05
Total protein:-	6.87 ± 0.83	7.08 ± 0.73	0.69	> 0.05
Sesum albumin:-	3.96 ± 0.87	4.16 ± 0.6	0.67	> 0.05
Prothrombin time:-	14 ± 1.50	12.94 ± 0.82	2.09	> 0.05

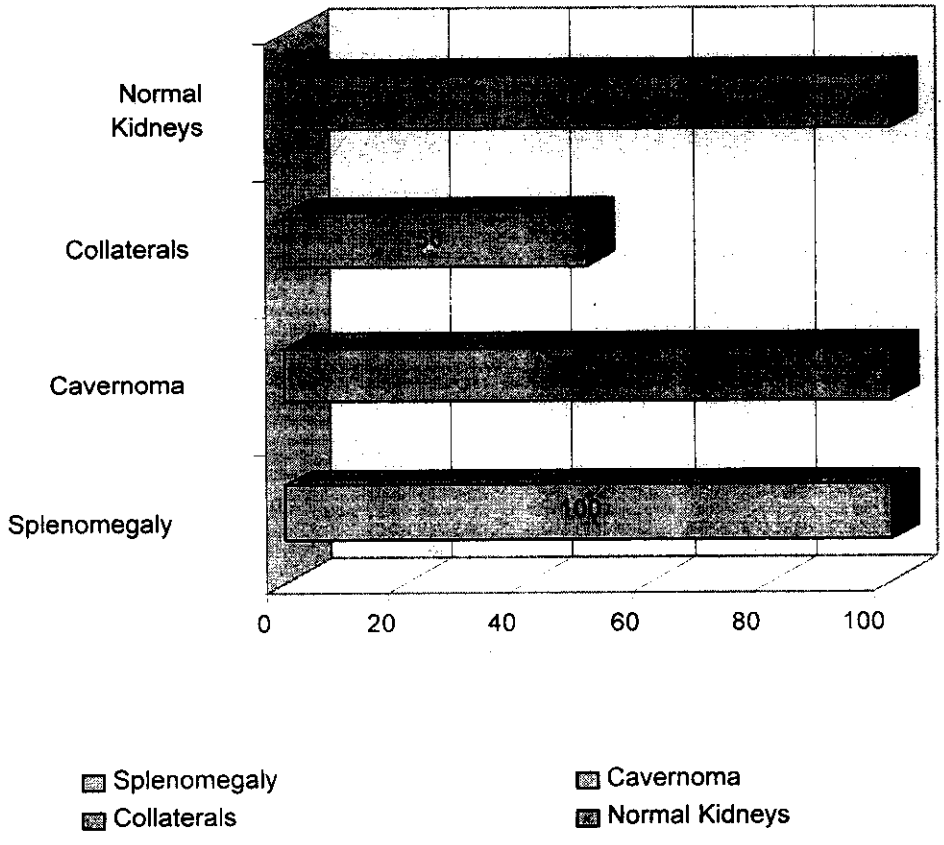
The mean ± standard deviation for WBCs, platelets, serum bilirubin, AST, ALT, total proteins and serum albumin for patients (25cases) and controls, (10cases) shows an insignificant difference while mean ± standard deviation for Hb, RBCs and prothrombin time shows significant difference between patients (25cases) and controls (10cases).

For the 22 cases of portal vein thrombosis abdominal ultra-sonography showed splenomegaly for all cases (22), presence of cavernoma for all cases (22), collaterals were seen in 11 cases (50%). Non of the 22 patients of portal vein thrombosis had ascites (Table 7). For the cases of venoocclusive disease abdominal ultra-sonography showed hepatomegaly for all cases (3). Two patients of the three patients of veno-occlusive disease had ascites.

Table (7): table showing the findings detected by ultrasound for the cases of portal vein thrombosis (22)

Ultrasound findings	No. of cases (22)	%
Hepatomegaly	0	0
Splenomegaly	22	100
Cavernoma	22	100
Collaterals	11	50
Ascites	0	0
Normal kidneys	22	100

Figure 2. ultrasound findings of cases of portal vein thrombosis (22).



Upper endoscopy revealed oesophageal varices with varying grades in all cases of portal vein thrombosis. 2 children (9.1%) had grade I varices. eleven children (50%) had grade II varices. 5 children (22.7%) had grade III varices and 4 children (18.2 %) had grade IV varices. Fundal varices were detected in 6 children (27.3%). Congestive gastropathy was present in 5 children (22.7%). (Table 8).

Upper endoscopy was done for only one case of veno occlusive disease and revealed grade II oesophageal varices. No fundal varices. Diffuse hyperemia of the whole gastric mucosa and bile is seen filling the gastric cavity.

Table (8):- the endoscopic findings encountered in the cases of portal vein thrombosis (22).

Endoscopic findings	No. of cases	%
Oesophageal varices grade I	2	9.1
Oesophageal varices grade II	11	50
Oesophageal varices grade III	5	22.7
Oesophageal varices grade IV	4	18.2
Fundal varices	6	27.3
Congestive gastropathy	5	22.7

Liver biopsy was done for all cases of portal vein thrombosis and venoocclusive disease. Mild portal fibrosis was detected in 4 children and mild fatty change was detected in 2 cases.

Pro thrombin time ranged from 12.5 to 19 seconds in cases with a mean of 14 $\pm$ 1.50 seconds, while for controls it ranged from 12-15 seconds with a mean 12.94 $\pm$ 0.82 seconds which aisstatistically significant difference

Figure 3. frequency of oesophageal varices of cases of portal vein thrombosis (22).

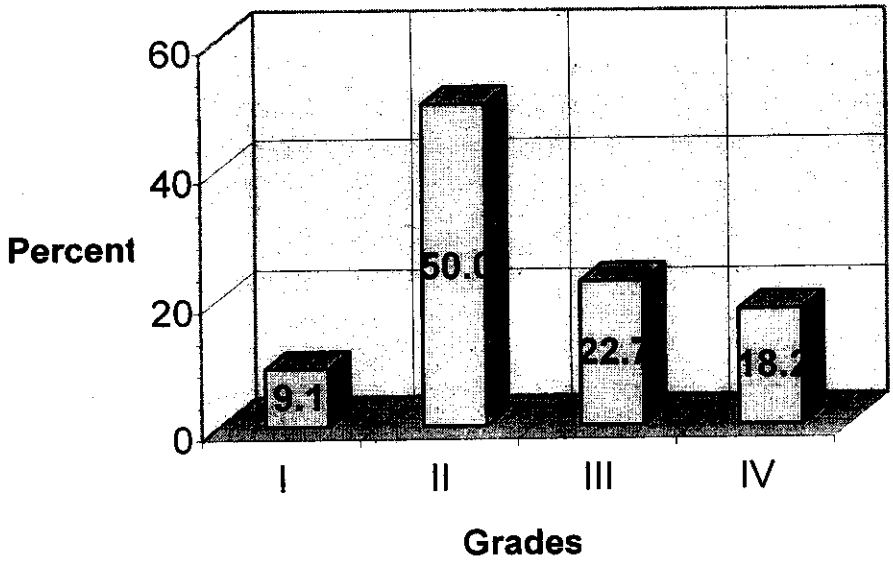


Figure 4. frequency of fundal varices encountered in studied cases of portal vein thrombosis.

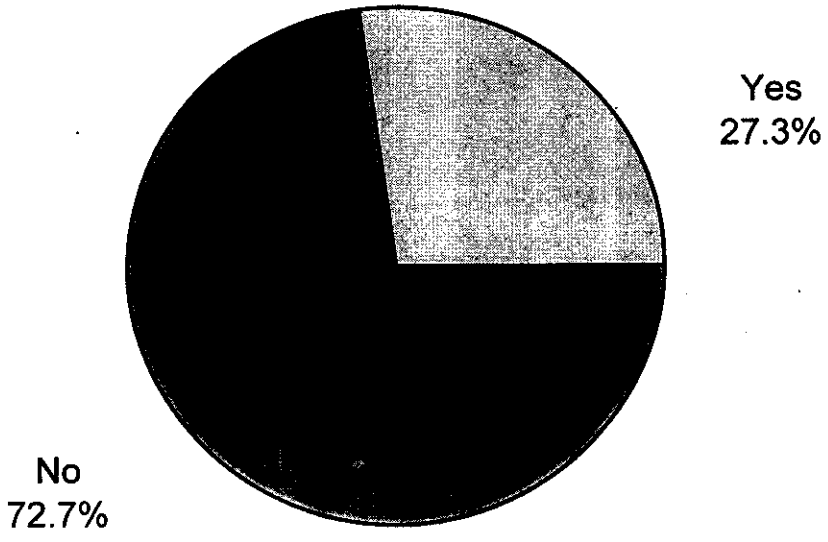
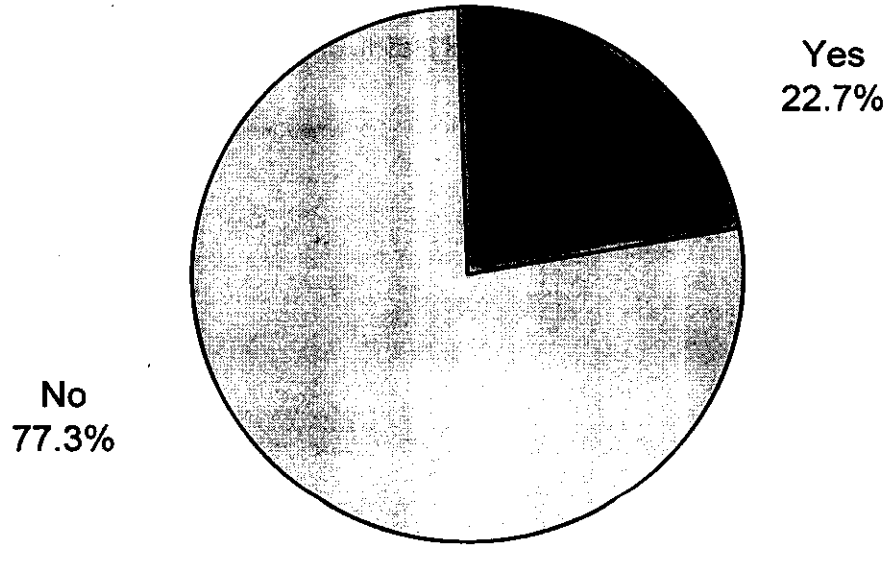


Figure 5. frequency of congestive gastropathy encountered in studied cases of portal vein thrombosis.



Comparison between patients of portal vein thrombosis and veno-occlusive disease (25) and controls (10) regarding to IgG and IgM

The mean for anticardiolipin antibodies (IgG) for patients of portal vein thrombosis and veno-occlusive disease (25) was 12.94 ± 6.56 GPL units and the mean for controls (10) was 6.75 ± 2.19 GPL units. This shows a significant increase in mean for IgG among patients of portal vein thrombosis and veno-occlusive disease (25) than controls (table 9).

Also the mean for anticandiolipin antibodies (IgM) for patients of portal vein thrombosis and veno-occlusive disease (25) was 1.66 ± 0.52 MPL units and the mean for controls was 1.05 ± 0.66 MPL units which is not statistically difference (table 9).

Table (9): Mean (X) and standard deviation (± SD) of IgG and IgM for patients of portal vein thrombosis and veno-occlusive disease (25) and controls (10).

Studied Parameters	Patients of portal vein thrombosis and veno-occlusive diserse(25)		Controls		T.Test	P
	Mean (X)	Standard deviation(± SD)	Mean (X)	Standard deviation(±SD)		
IgM	1.66	0.52	1.05	0.66	0.71	> 0.05
IgG	12.94	6.56	6.75	2.19	2.9	<0.01

The IgG anticardiolipin antbodies level in 10 halthy subjects studied was 6.75 ± 2.19 (mean ± Standard deviation) GpL nuits. Thus the cut off level (mean + 2 standard deviation) used for anticardiolipin antibodies (IgG) positivity was 11.13 GPL units.

Anticardiolipin antibody (IgG) levels in patients with portal vein thrombosis and veno-occlusive disease were higher than those in normal controls.

The IgM anticardiolipin antibodies level in 10 healthy sudjects studied was 1.05 ± 0.66 (mean ± standard deviation) MpL units. Thus the cut off level (mean + 2standard deviaion) used for anticardiolipin antibodies (IgM) positivity was 2.37 MPL units.

Anticardiolipin antibody(IgM) levels in patients with portal vein thrombosis and veno-occlusive disease were similar to those in normal controls.

Comparison between patients of portal vein thrombosis (22) and patients of veno-occlusive disese (3) regarding to IgM, IgG, Hb, RBCs, WBCs, pletclets, seum bilirubin, AST, ALT, total proteins, serum albumin and prothrombin time:-

The mean for IgM, IgG, RBCs, serum bilirubin, ALT, total proteins, serum albumin and prothrombin time for patients of portal vein thrombosis (22) and other patients complain of veno-occlusive disease shows an insignificant difference on the other hand the mean for Hb, WBCs, platelets and AST for the same patients shows significant increase among patients of veno-occlvsive disease (3) than patients of portal vein thrombosis (22) (Table 12).

Table (10):-

Mean ($\overline{X}$) and standard deviation (±SD) of IgM, IgG, Hb, RBCs, WBCs, platelets, serum bilirubin, AST, ALT, total proteins, serum albumin and prothrombin time for patients complain of portal vein thrombosis and others complain of veno occlusive disease (3).

Studied parameters	Patients of portal vein thrombosis (22) mean ± S.D	Patients of veno occlusive disease mean ± S.D	T.Test	P
IgM	2.21 ± 1.7	1.43 ± 0.9	1.23	>0.05
IgG	12.90 ± 6.81	13.17 ±5.3	0.06	>0.05
Haemoglobin	10.03 ± 1.57	7.17 ±2.92	2.82	<0.01
RBCs	3.72 ± 0.44	3.54 ±0.64	0.64	>0.05
WBCs	5.16 ± 1.83	10.97 ±3.09	4.60	<0.01
Platelets	162.82 ±102.81	342.33 ±132.38	2.76	<0.01

Studied parameters	Patients of portal vein thrombosis (22) mean ± S.D	Patients of veno occlusive disease mean ± S.D	T.Test	P
Seum bilirubin	0.70 ± 0.54	1.37 ±1.08	1.78	>0.05
AST	51.89 ± 22.56	92.73 ± 82.93	2.04	<0.05
ALT	35.3 ± 15.71	29.70 ± 14.28	0.58	>0.05
Total proteins	6.95 ± 0.69	6.33 ± 1.70	1.20	>0.05
Serum albumin	4.03 ± 0.79	3.43 ±1.44	1.13	>0.05
Prothrombin time	14.14 ± 1.55	12.93 ± 0.21	1.33	>0.05