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Study of 30 Cases of Thalassemic Patients Underwent Splenectomy and Followed Up from 2010-2017

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Abstract:

A hospital –based perspective study involving 30 cases of thalassemic patients admitted and operated at Ibn-Albalady hospital in surgical unit since April 2010 to September 2017. Splenomegaly was operated upon on selective variables. The main variables assessed for splenectomy were blood transfusion requirement, high and huge splenic size. The results show that a mark decrease in frequency of blood transfusion and improve capacity of life. We recommended that the splenectomy should not be with held if indicated. Longer follow up is required for better evaluation of long term efficacy and late complication after splenectomy.

Key word: Splenectomy; Thalassemia.

Back ground:

Thalassemia is one of most common inherited hematological disorders, which are remaining as a major health problem throughout the world. Many patients with thalassemia major were required splenectomy. Throughout the care of patients with thalassemia, the size of spleen should be carefully monitored by physical examination, and ultrasonography. Splenectomy should be considered when:-

i. Annual blood transfusion exceed 1.5 times those of splenectomized patients, or more than 250ml/kg/year of backed red cells, or more than 400ml/kg/year of whole Blood:
   i. Splanic enlargement is accompanied by symptoms such as left upper quadrent pain, massive splenomegaly with possibility of splenic rapture.
   iii. Leucopenia or thrombocytopenia due to hypersplenism causing clinical problems like recurrent bacterial infections or bleeding.

Splenectomy should not be considered below the age of five years to ensure good immune system and to decrease risk of infections.

Aims and objectives

The aims of this study were:

i. To evaluate the benefit of Splenectomy in thalassemic patient regarding frequency of blood transfusion and quality of life.
ii. To determine the effect of splenectomy on the patients in reducing the amount of blood transfusion.
iii. To evaluate the quality of life after splenectomy in regarding of complications and long term effects.

Patients and method

A perspective study was conducted from April 2010 up to September 2017. The medical records of 30 thalassemic patients undergo splenectomy at Ibn -Albalady hospital was followed up and reviewed including the following data:-

i. Name.
ii. Age
iii. Sex.
iv. Indication for splenectomy.
v. Preoperative investigation.
vi. Post operative complication.
vii. Follow up chart of patients along the period of the study.

Results:

From 30 thalassemic patients understudy, 18(60%) patients were male and 12 (40%) were female which underwent plenectomy as shown in table (1).

Table (1) Sex distribution

Sex	Number of patient	Percentage
Male	18	60%
Female	12	40%

The age of (33.33%) of thalassemic patients that underwent plenectomy were between 11 to 15 years old as shown in table(2).

Table (2) Age distribution

Age in year	Number of patient	Percentage
6-10	6	20%
11-15	10	33.33%
16-20	9	30%
21-25	5	16.67%

Table (3) shows the distribution of patients' preoperative according hemoglobin level, which were of two third of sample between 5-8 gm/dl.

Table (3) Distribution according preoperative hemoglobin level

Preoperative Hb level	Number of patient	Percentage
5-8 gm/dl	18	60%
8.1-10 gm/dl	10	33.33%
10.1-12 gm/dl	2	6.67%

Ten patients understudy were infected with hepatitis C (HCV), whereas one patient with hepatitis B virus (HBV). Four patients with diabetes had included in our study as shown in table

Time interval required for blood transfusion after splenectomy for 40% of patients was 45 day up to 60 day as shown in table (6).

Table (6) Distribution according to post

(4).

Table (4) Distribution according to viral hepatitis C, B, and diabetic (DM)

Investigation	Number of patient	Percentage
HCV +ve	10	33.33%
HBV +ve	1	3.33%
Diabetic	4	13.34%

Table (5) shows the main indication for surgery which was for four fifths patient higher blood transfusion requirement while for the remaining was huge spleen.

Table (5) Indication of surgery

Indication	Number of patient	Percentage
Increase frequency of blood transfusion	24	80%
Huge spleen	6	20%

operative blood transfusion time interval

Time interval (months)	Number of patient	Percentage
more than 6 months	1	3.33%
6-2	5	16.00%
2-1.5	12	40.00%
1.5-1	10	33.31%
Less than one month	2	6.67%

Concerning early post operative complication 4 of 30 patient suffered from wound infection, 2 of 30 patient suffered from chest infection as shown in table (7).

Table (7) Distribution according to early post operative complication

Complication	Number of patient	Percentage
Bleeding	———	———
Wound infection	4	13.33%
Chest infection	2	6.67%
Paralyticilius	———	———
Pulmonary atelactasis	———	———

Table (8) shows the distribution of sample according to late post operation complication. Three of four diabetic patient were developed late post operative complication in the form of thromboembolic complication (one blindness, one illusion, and one sever dorsal vertebral pain). No one of our study had septicemia or risky infective complication.

Table (8) Distribution according to late

In our study, female to male ratio was approximately 2:3; definite male preponderance has been noted in table (1). The patients age were between 6-25 years with an average of 18.5 years the reason for the older age of our patients, probably because delayed referral for splenectomy and un willingness of patients for major surgery[table (2)].

The Hb level of more than 93% of understudy patients was under 10

post operation complication

Complication	Number of patient	Percentage
Fistula	———	———
Splenosis	———	———
Blindness	1	⅓%
Illusion	1	⅓%
sever Dorsal vertebral pain	1	⅓%

One of 30 patients died after 4 years because of development of diabetes, severe respiratory infection, and followed by multiorgans failure.

Discussion

This clinical study was undertaken at Ibn-Albalady hospital. A total number of 30 patients were considered with thalassemia major with various complains, and were operated upon (splenectomy) during the period between March 2010 and September 2017.

All the patient had improvement of hemoglobin (Hb) level from an average of 8.2 g/dl up to 10.5 g/dl the period for blood transfusion were become longer than before splenectomy.

Regarding early post operative complication in our study about 13% of the patient suffered from wound infection, and about 7% suffered from chest infection. This high percentage may be due to lack of preoperative vaccination (pneumococal , H.influenza , and meningo coccal vaccines) which should be given 4 weeks prior to operation .

On other hand splenectomized patients are at increased risk of infection in thalassemic person as compared to normal children [table (7)], but no one of our study had g/dl preoperatively. That's why we usually give from 1-4 pints blood transfusion 1-4 days before surgery to ensure Hb level more than 10g/dl at operation[table (3)].

We had seen that there is increase possibility of complication in such a patients which was HCV, HBV, and diabetes. In our study the main indication for surgery was:-

i. Higher blood transfusion requirement which was more than 1 pint of blood /15days for most of our patients (80%)
ii. 20% of our patients are undergo splenectomy because of excessive enlargement of spleen causing abdominal pain and dyspnoea .

Follow up of patient had been done after splenectomy every 15 days interval for one month, then monthly for six month, then six monthly for whole period of study.

up is required for better evaluation of long term efficacy and late complication after splenectomy.

Conclusion

i. Thalassemia major is quite common coalition effecting mainly pediatric age groups, both genders were affected.
ii. Thalassemia patient usually suffering from splenomegaly because of increased red blood cell (RBC) destruction, repeated blood transfusion Iron overload and exhramadallary hematopoiesis.
iii. Splenectomy definitely reduced blood requirement from 290ml/kg/year preoperatively to less than 140 ml/kg/year so the requirement for blood transfusion

septicemia or risky infective complication.

Four of thalassemia patients were also diabetic , three of those 4 diabetic patient developed late post operative complication in the form of thromboembolic complication (one blindness, one illusion , and one sever dorsal vertebral pain) this probably due to polycytopenia occurred after splenectomy [table (8)]. In late post operation complicated, we use Aspirin as preventative measure for thromboembolism and this give excellent result.

One of 30 patients died after 4 years because of development of diabetic (DM), severe respiratory infection, and followed by multiorgans failure. Longer follow

vi. Patients' health improved after splenectomy due to improvement in HB level. Decreasing of blood transfusion requirement help to reduce hospital visits therapy coast and hospitalization time most patient had improved school attendance and better academic performance.

So we strongly recommended that the splenectomy should not be with held if indicated.

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become less frequent improvement of hemoglobin (Hb) level also occur this improvement is sustained over a long period of time.

iv. The splenectomy with proper indication, proper preparation, improved quality of life in those thalassemia patients; school attendance; decrease burden on patient and his family.
v. Those patients who are hepatitis C (HCV) +ve associated with diabetes, when they are undergo splenectomy, they are sussubtable for thrombotic complication more than other patient, that's why Aspirin should be given post operatively for such patient as protective measure.

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