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SHORT REPORT

Adenoidectomy and tonsillectomy: is clotting profile relevant?

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Abstract
Background: Adenoidectomy and tonsillectomy are common surgical procedures performed mostly in paediatric population. They have the risk of haemorrhage in an area that may not be easily accessible. Thus the need to preoperatively do coagulation screening and this has remained controversial. Hence, the purpose of this study was to retrospectively evaluate our experience in Ibadan.
Method: The records of sixty-eight patients that underwent adenoidectomy/tonsillectomy from 1998 to 2002 in the Department of ORL, UC H were evaluated for demographic data, history and physical findings that could suggest bleeding disorders, values of prothrombin/activated partial thromboplastin time and occurrence of peri-/postoperative haemorrhage.
Results: There were 41 males and 27 females with M: F ratio of 1.5: 1. The age range was 6 months to 38 years, while the common age group involved was 0 – 10 years (75%). Four patients (5.9%) had history of risk factor of bleeding. Eight patients (11.8%) and 23 patients (33.5%) had prolonged PT and aPTT respectively. One patient with normal coagulation study had postoperative haemorrhage due to remnant of tonsillar tissue. There was no documentation of further confirmatory coagulation investigation in those that were prolonged. No correlation was observed between the coagulation tests and intraoperative blood loss and duration of surgery generally.
Conclusion: Although these tests are routinely done in our centre, there was no clear evidence in support of their relevance. However, we advocate a flexible approach to this issue and each patient must be individually assessed and effort must be made to standardise the approach to adequate history taking with proper documentation of all relevant information before one decides to perform any investigation.

Key words: Adenoidectomy, tonsillectomy, clotting profile

Introduction

Adenoidectomy and tonsillectomy are the most common surgical operations performed in children in otolaryngological practice. These procedures are usually simple and uncomplicated if well performed. However, perioperative or postoperative haemorrhage remains a substantial concern and a potential life threatening problem. The morbidity remains clinically significant, with incidence of postoperative haemorrhage ranging from 2% to 7%. [1]

Most common inherited coagulopathies (vonWillenbrand disease (vWD) and haemophilia) necessitate coagulation screening in patients undergoing these procedures. However their usefulness in predicting the risk of haemorrhage is controversial. Other factors for detecting those at risk of haemorrhage include careful personal and family history, complete blood count, platelet level and bleeding time. [2] These are routinely done in our centre but no auditing has been done to evaluate the usefulness or otherwise of the coagulation studies.

Patients and Method

The medical records of sixty-eight patients, who had adenoidectomy, tonsillectomy or both from 1998 to 2002 in the Dept. Of Otorhinolaryngology, UCH, Ibadan was retrospectively reviewed.

The data extracted were age, sex, history/physical findings suggestive of bleeding disorders, and the values of normal or prolonged PT and aPTT of all patients (*these were based on the upper limit of normal range, as defined by 2 standard deviation above the mean for the hospital. A prolonged PT was greater than 15sec and a prolonged aPTT was greater than 48sec.)

Other parameters looked for were cancellation of surgery or therapy for prolonged PT or aPTT, haemorrhage in intra or postoperatively requiring blood transfusion, estimated blood loss, and duration of surgery. Data was analysed with SPSS 11.0 software for windows.

Results

Sixty-eight patients' records analysed showed that there were 41 males (60.3%) and 27 females (39.7%), with male to female ratio of 1.5:1. The age range was 6mths to 38yrs., with a mean age of 7.89yrs (SD 9.34yrs). Fifty-one patients (75%) were between 0 to 10yr age group (Table 1).

The history of risk factors of bleeding was asked for in only 4 patients (5.9%). Prolonged PT and aPTT were observed in 8 (11.8%) and 23 (33.8%) patients respectively (Table 2). Type of surgery the patients had according to age group and the distribution of the prolonged PT and aPTT according to the type of surgery offered as shown in Tables 3 and 4 respectively.

There was no documentation of further investigation in those with prolonged PT and aPTT. Amongst all the patients, only a 6yr old female offered adeno -tonsillectomy had post operative haemorrhage that required re-evaluation and blood transfusion and this was due to remnant of tissues. None of the patients had cancellation of surgery or any therapy for abnormal PT and aPTT.

There was no significant correlation between the coagulation tests and intraoperative blood loss, and duration of surgery generally [(PT/blood loss (*p* 0.085), PT/duration of surgery (*p* 0.481); aPTT/blood loss (*p* 0.0654), aPTT/duration of surgery (*p* 0.189)].

Table 1: Distribution of patients according to age group

Age (years)	No.	%
0 – 5	39	57.4
6 – 10	12	17.6
11 – 15	6	8.8
≥ 16	11	16.2

Table 2: Prevalence of prolonged preoperative coagulation screening tests

	Prothrombin time n = 68 (%)	Activated partial thromboplastin time n = 68 (%)
Normal	57 (83.8)	42 (61.8)
Prolonged	8 (11.8)	23 (33.8)
Missing	3 (4.4)	3 (4.4)

Table 3: Type of surgery according to age group

Age (years)	Type of surgery		
	Adenoidectomy n = 23 (%)	Tonsillectomy n = 19 (%)	Adenotonsillectomy n = 26 (%)
0 – 5	23 (100)	2 (10.5)	14 (53.8)
6 – 10	-	4 (21.1)	8 (30.8)
11 – 15	-	4 (21.1)	2 (7.7)
≥ 16	-	9 (47.3)	2 (7.7)

Table 4: Distribution of prolonged coagulation tests according to type of surgery

Type of surgery	Coagulation tests			
	Prothrombin time		Activated partial tromboplastin time	
	Normal (%)	Prolonged (%)	Normal (%)	Prolonged (%)
Adenoidectomy n = 23	21 (91.3)	2 (8.7)	16 (69.6)	7 (30.4)
Tonsillectomy n = 19	15 (78.9)	1 (5.3)	6 (31.6)	10 (52.6)
Adenotonsillectomy n = 26	21 (80.8)	5 (19.2)	20 (76.9)	6 (23.1)

Three patients (15.8%) did not have any coagulation test

Discussion

Coagulation studies prior to adenoidectomy and /tonsillectomy have been observed to generate different findings and conclusion. [1] However, Robbins *et al* believed that predictable risk for bleeding abnormality could be ascertained from well-obtained history and review of readily available laboratory results. [3] In our study, there was evidence of poor documentation of predictive risk factors of

bleeding disorders. It is known that history alone would have been ideal for predictive outcome, but not the case in most situations, since only those at risk may then require further testing leaving out the minority that may be asymptomatic. [1]

The two most common inherited coagulopathies (vWD and haemophilia) that screening tries to detect are both disorders of the intrinsic coagulation pathway; therefore testing the extrinsic pathway with PT is of little value, while testing the extrinsic pathway with aPTT is fraught with interpretive difficulties. [4] Some still believe these tests are necessary when there are no histories of bleeding tendencies because timely diagnosis allow for proper treatment due to some benign nature of some hereditary factors that may escape clinical detection even in asymptomatic patients. [2, 5, 6] Moreover, factor IX deficiency is known to have the same clinical manifestation as haemophiliac and in mild or latent cases, aPTT will be prolonged and even help to detect other causes of bleeding like circulating anticoagulants and antibody inhibitors. [7]

However, in those that have normal laboratory values and still experience postoperative bleeding, other factors [like surgical technique, expertise of the surgeon or infection] should be considered. [1] Detection of abnormalities in routine preoperative coagulation tests only resulted in change in clinical management in less than 1% of cases resulting in unnecessary concern about many healthy children, delaying surgery, and adding to overall costs. [2, 8, 9]

Although controversies will still be generated on this issue, since we could not ascertain the relevance of these tests in this study; however, there is need to consider certain facts before decisions are made in terms of patient's care. These are decision on individual health care depending on the type of health institution of practice, cost effective medicine, and health institution protocol for practice together with medicolegal action in view of gradual awareness of fundamental human rights amongst the populace. [1] We therefore, advocate a flexible approach to this issue, and each patient must be individually assessed on his/her own merit. Efforts should be made to standardise the approach to history taking with proper documentations of all relevant stages of patient's care.

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