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Original Research

Assessment of cases of Baker's cyst in children managed surgically

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***ABSTRACT*:**
Background: The incidence of Baker's cyst represents 2.4% in small prospective screening populations. The present study assessed cases of Baker's cyst in children. **Materials & Methods:** 25 cases of Baker's cyst in children of both genders were surgically excised and was sent for histopathological examination. **Results:** Out of 25 patients, boys were 15 and girls were 10. Site was left in 13 and right in 12 cases. Etiology found to be idiopathic in 10. Hemophilia in 8 and arthritis in 7 and recurrence was seen in 2 cases. The difference was non- significant (P> .05). **Conclusion:** Most common cause of Bekers cyst was idiopathic, hemophilia and arthritis.
Key words: Bakers cyst, Children, Surgery.

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INTRODUCTION

Baker's cyst is a distended gastrocnemius semimembranosus bursa. The first description of Baker's cysts is referred to Adams in 1840, while Baker studied these cysts in the context of intra-articular pathologies and effusion of the knee joints.[1] Pediatric patients rarely exhibit Baker's cysts. The incidence of Baker's cyst represents 2.4% in small prospective screening populations. There is still a debate whether Baker's cysts or popliteal cysts in children communicate or not with the internal joint space.[2]

It usually communicates with the joint by way of a slit like opening of the postero-medial side of the knee capsule just above to the joint line. According to a different theory it is a simple extension of the synovial joint; in all cases the term "cyst" is unappropriate, as it is a synovial structure.[3] A Baker cyst may serve as a protective mechanism for the knee, infact intrinsic intra-articular disorders may cause joint effusion. The knee effusion is displaced into the Baker's cyst, thus reducing potentially dangerous pressure in the joint space. Jayson and Dixon postulated that joint effusion and fibrin are pumped from the knee joint into the Baker's cyst but not in the reverse direction, thanks to a valve like communication, such as a ball valve or a Bunsen valve.[4]

Several conditions are associated with Baker's cysts, such as intra-articular lesions (meniscal tears, anterior cruciate ligament tears), arthritides (rheumatoid arthritis, osteoarthritis, juvenile idiopathic arthritis, psoriasis), systemic lupus erythematosus, infection, hemophilia, pigmented villonodular synovitis.[5] The present study assessed cases of Baker's cyst in children.

MATERIALS & METHODS

The present study comprised of 25 cases of Baker's cyst in children of both genders. Parents' consent was obtained before starting the study.

Demographic data such as name, age, gender etc. was recorded. A thorough clinical examination was done. Plain x-ray and knee ultrasonography were routinely done in all cases. Under general anesthesia while the

patient was in prone position; a lazy S incision in the popliteal fold was done. Meticulous dissection of the cyst was done using combined blunt with sharp dissection to avoid rupture of the cyst. Once the base was reached, excision was done and the residual orifice was closed with purse string stitches using long-lasting absorbable suture (P.D.S. 5/0) in two layers. The excised cyst was sent for histopathological examination. Results thus obtained were statistically analyzed. P value less than 0.05 was considered significant.

Results

Table I Distribution of patients

Total- 25		
Gender	**Boys**	**Girls**
Number	15	10

Table I, graph I shows that out of 25 patients, boys were 15 and girls were 10.

Graph I Distribution of patients

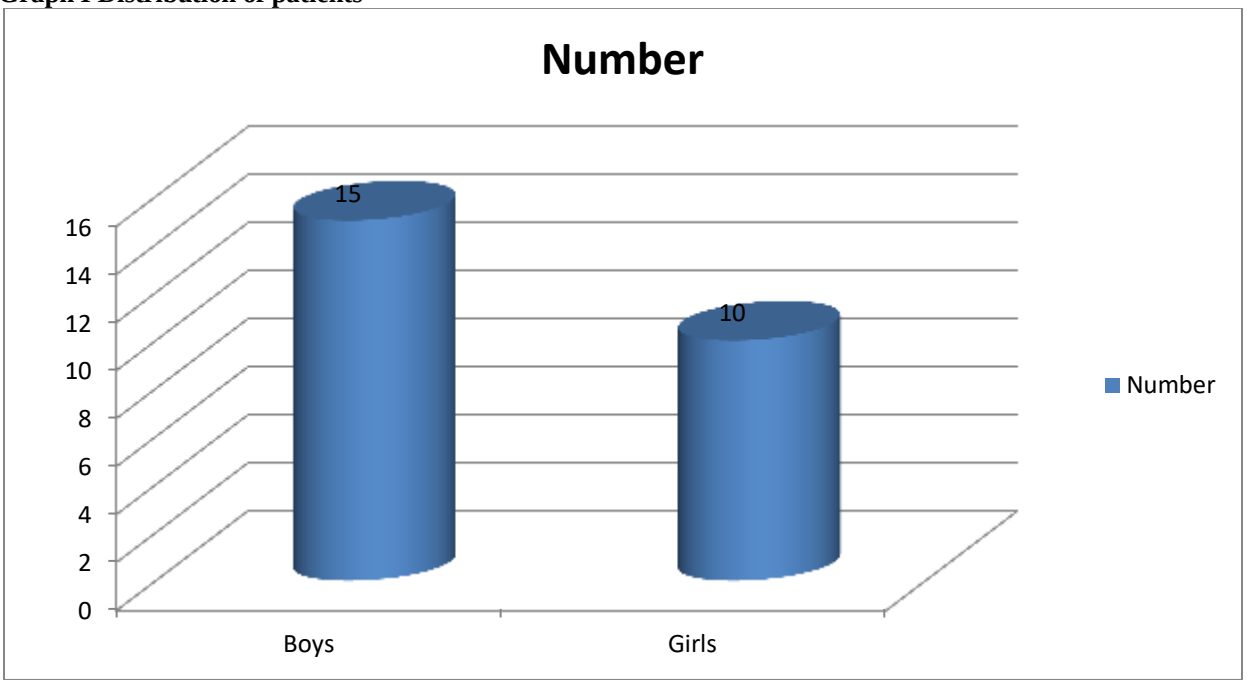
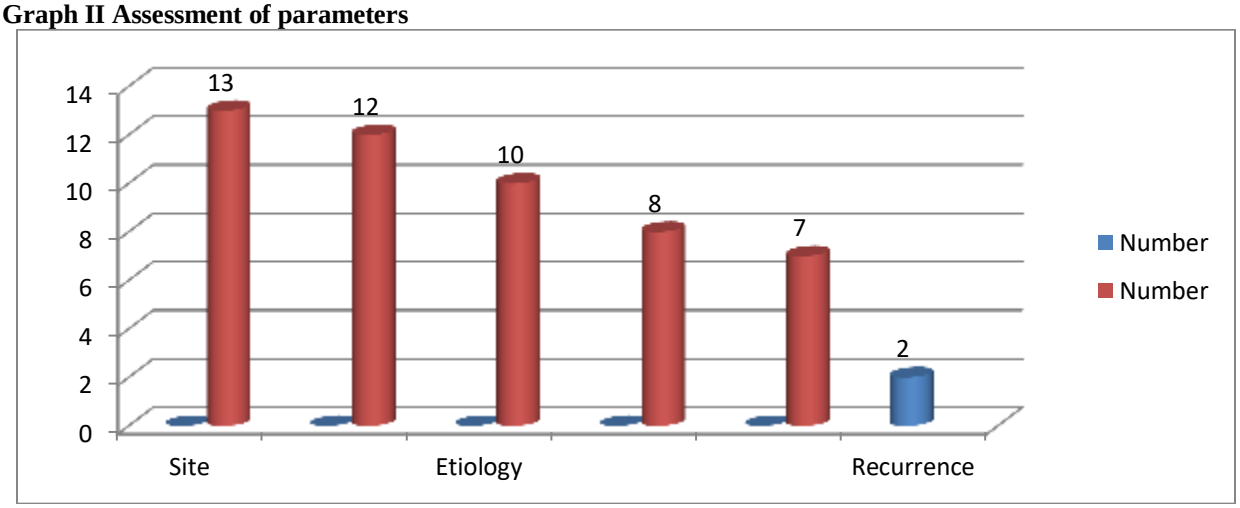


Table II Assessment of parameters

Parameters	Number	Number	P value
Site	Left	13	0.82
	Right	12	
Etiology	Idiopathic	10	0.71
	Hemophilia	8	
	Arthritis	7	
Recurrence	2		-

Table III, graph II shows that site was left in 13 and right in 12 cases. Etiology found to be idiopathic in 10. Hemophilia in 8 and arthritis in 7 and recurrence was seen in 2 cases. The difference was non- significant (P> .05).

Graph II Assessment of parameters



DISCUSSION

Popliteal synovial cysts (Baker's cysts) represent common occurrences in adults. A popliteal cyst is a mass containing synovial fluid folded by synovial wall and it is located in popliteal fossa. The eponym honors the work of Dr William Morrant Baker, a British surgeon who lived in 18th century.[6] According to the best reliable theory, a Baker's cyst is the serous bursa of the tendons of the medial head of the gastrocnemius and semimembranosus muscles. It usually communicates with the joint by way of a slitlike opening of the postero-medial side of the knee capsule just above to the joint line.[7] According to a different theory it is a simple extension of the synovial joint; in all cases the term "cyst" is unappropriate, as it is a synovial structure.[8] The present study assessed cases of Baker's cyst in children.

In present study, out of 25 patients, boys were 15 and girls were 10. Alessi et al[9] examined 16 pediatric patients, with the clinical diagnosis of Baker's cyst. The possibility to confirm or to exclude the presence of the lesion, assess the structure, presence of bilateralism and joint effusion were considered. Three subjects had known juvenile arthritis, 2 hemophilia, 11 a popliteal swelling in the absence of concomitant diseases. In all patients it was possible to confirm (11) or to exclude (5) the presence of Baker's cyst. The idiopathic forms (6) exhibited anechoic structure; in patients with arthritis (3) there was hypertrophic synovium; in hemophilic patients at the presentation (2) anechoic structure with layering (serum and red blood cells); in chronic hemophilia synovial hypertrophy was seen. Joint effusion was constantly present in children with hemophilia and arthritis and in 1 case of idiopathic cyst.

We observed that site was left in 13 and right in 12 cases. Etiology found to be idiopathic in 10. Hemophilia in 8 and arthritis in 7 and recurrence was seen in 2 cases. Cellerini et al[10] found that seven cases had cysts less than 3 cm by ultrasonography and were managed conservatively. In five out of these seven cases, the cysts disappeared with no recurrence within the first year of follow-up. In two cases, the cysts increased in size with increase in pain. These two cases were subjected to surgical excision after 1 year of follow-up. The remaining eight cases had cysts more than 3 cm and were managed by surgical excision. Out of the ten cases which were managed by surgical excision, recurrence occurred in 3 cases within the first postoperative year (after 4 months, 7 months, and 8 months) consecutively.

De Maeseneer et al[11] reported that history of trauma may not be a frequent cause of Baker's cyst especially in children. It may be presented with no definite pathological cause in children. Baker's cysts may be detected at any age but one third of cases were reported to occur within the first 15 years of life. Smith et al[12] reported that the condition is more common unilaterally, more common in boys, and has a peak age of occurrence between 2 and 14 years.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that most common cause of Bekers cyst was idiopathic, hemophilia and arthritis.

REFERENCES

1. Seil R, Rupp S, Jochum P, Schofer O, Mischo B, Kohn D. Prevalence of popliteal cysts in children. A sonographic study and review of the literature. Arch Orthop Trauma Surg 1999;119:73-5.
2. Draghi F, Danesino GM, Coscia D, Precerutti M, Pagani C. Overload syndromes of the knee in adolescents: sonographic findings. J Ultrasound 2008;11(4):151-7.
3. Soslow AR. Popliteal cysts in a pediatric patient. Ann Emerg Med 1987 May;16(5):588-91.

4. Ward EE, Jacobson JA, Fessell DP, Hayes CW, van Holsbeeck M. Sonographic detection of Baker's cysts: comparison with MR imaging. AJR Am J Roentgenol 2001;176:373-80.
5. Lamer S, Sebag GH. MRI and ultrasound in children with juvenile chronic arthritis. Eur J Radiol 2000 Feb;33(2): 85-93.
6. De Greef I, Molenaers G, Fabry G. Popliteal cysts in children: a retrospective study of 62 cases. Acta Orthop Belg 1998;64: 180-3.
7. Lang IM, Hughes DG, Williamson JB, Gough SG. MRI appearance of popliteal cysts in childhood. Pediatr Radiol. 1997;27:130 –2. 10.
8. Janzen DL, Peterfy CG, Forbes JR, Tirman PFJ, Genant HK. Cystic lesions around the knee joint: MR imaging findings. Am J Roentgenol. 1994;163(1): 155 –61.
9. Alessi S, Depaoli R, Canepari M, Bartolucci F, Zacchino M, Draghi F. Baker's cyst in pediatric patients: ultrasonographic characteristics. Journal of ultrasound. 2012 Feb 1;15(1):76-81.
10. Cellerini M., Salti S., Trapani S., D'Elia G., Falcini F., Villari N. Correlation between clinical and ultrasound assessment of the knee in children with mono-articular or pauci-articular juvenile rheumatoid arthritis. Pediatr Radiol. 1999;29:117–123.
11. De Maeseneer M, Debaere C, Desprechins B, Osteaux M. Popliteal cysts in children: prevalence, appearance and associated findings at MR imaging. Pediatr Radiol 1999 Aug;29(8):605e9.
12. Smith JT, Yandow SM. Benign soft-tissue lesions in children. Orthop Clin North Am. 1996;27:645 –54