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ORIGINAL ARTICLE

Which treatment modality for pediatric pilonidal sinus: Primary repair or secondary healing?

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Summary Objective: To evaluate the outcome and characteristics of patients who were operated for sacrococcygeal pilonidal sinus (SPS) treatment using primary repair or secondary healing technique.

Methods: Forty-seven patients (female: 25, male: 22) diagnosed with pilonidal sinus operated between 2009 and 2015 were retrospectively analyzed. The cases were evaluated for age, gender, body mass index (BMI), surgical technique, hospital stay, recovery time and recurrence. Mainly two types of surgical techniques were applied: primary repair and secondary healing.

Results: Mean age of the patients was 15.6 (± 1.2) years. Excision and primary repair was performed in 36, excision and secondary healing was in 11. There was no statistically significant difference between the groups regarding length of hospital stay and duration of postoperative pain ($p > 0.05$). There was a statistically significant difference between groups regarding recovery time ($p < 0.05$). Recurrence was detected in a total of 11 (23.4%) patients.

Conclusion: We did not find any significant difference concerning length of hospitalization, duration of postoperative pain and recurrence rate. However we determined that the primary repair group recovery time is significantly shorter compared to our secondary healing group. Therefore we recommended primary repair in the treatment of primary repair PS in children.

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1. Introduction

Sacrococcygeal pilonidal sinus (SPS) is a pathology that occurs with acute or chronic infection in the natal cleft, especially in young men.¹ The incidence of SPS in childhood, especially in the adolescence period, has been reported as 1.2–2/10.000.² Congenital or acquired theories are suggested in the etiopathogenesis.³ Obesity, sedantary lifestyle, local irritation, and trauma have also been reported factors responsible in SPS.

There is no consensus on the best surgical technique for SPS. Currently, enbloc excision of the pilonidal sinus is the preferred method of treatment. However the common approach is to choose the method that is easy to apply, allows the patient to return to daily activity in a short period of time and has a low recurrence rate. It is also believed that the closing method has a direct effect on the development of recurrence.

The aim of this retrospective study is to compare the results of primary and secondary closure of pilonidal disease and to evaluate the outcome of surgical SPS treatment.

2. Patients and method

Following approval of the ethics committee, records of 47 patients who were operated for SPS in our clinic between 2009 and 2015 were examined retrospectively. The cases were evaluated regarding age, gender, body mass index (BMI), surgical technique, hospital stay, pain duration, recovery time and recurrence. BMI was assessed as <18.5 being low weight, 18.5–24.9 normal weight, 25–29.9 overweight and, >30 obese. Two main surgical approaches were: excision and secondary wound healing in cases between 2009 and 2012 (**Group 1**) and excision and primer closure in cases between 2012 and 2015 (**Group 2**).

The determination of the inflammation is done with clinical signs. Local redness is considered as minor and abscess formation is considered as major inflammation. Severe infection (abscess etc) was not detected in any of the cases prior to operation. Oral antibiotics were given to all cases with redness around the sinus and minimal purulent discharge before surgery.

In both techniques, the cutaneous and subcutaneous tissue in the affected area was excised until the presacral fascia. In group 1, the subcutaneous fat tissue was

approximated with 2/0 vicryl sutures and left for secondary healing. Simple wet dressing were used in the post-operative period. No negative pressure dressing were used in this group. In group 2, for primary wound closure we used midline closure technique.

In the last year pre and postoperative laser epilation was routinely used in 5 patients as part of the treatment plan following the positive effect of this supplementary modality being reported in recent publications. Since there isn't enough long term data regarding this method the results weren't included in the study.

Independent two-group comparisons for statistical analysis were performed using the Mann–Whitney U test. The ratios of the categorical variables among the groups were tested by Chi-square analysis. The level of statistical significance was accepted as $p < 0.05$.

3. Results

Twenty-five (53%) cases were female and 22 (47%) were male. The mean age was 15.6 (± 1.2) years. The average age was 15.3 years (13–17 years) for female patients and 16 (14–18 years) for male patients. The average follow-up time was 3.6 years (3 months–5 years).

Mean BMI of all cases was 25.6 (± 4.6). Twenty-six patients (55.3%) had a BMI greater than or equal to 25.

There were 11 (24%) cases in Group 1 and 36 (76%) cases in Group 2. In group 2, Limberg flaps had been used at a different center before primary repair in two cases.

The duration of hospital stay was 2.2 (± 0.4) days in group 1 and 2.3 (± 1.2) days in group 2. There was no statistically significant difference between two groups regarding the length of hospital stay ($p > 0.05$).

Postoperative pain duration was 8.5 (± 12.3) days in group 1 and 7.3 (± 5.0) days in group 2. No statistically significant difference was found between the two groups in terms of postoperative pain ($p > 0.05$).

The time to recovery and complete return to full daily activity was 71.8 (± 42.1) days in group 1 and 26.8 (± 12.5) days in group 2. This difference was statistically significant ($p < 0.001$) (Table 1).

Recurrence (new sinus formation at the operation side) after SPS surgery was identified in 11 (23.4%) cases. There were 4 recurrences in group 1 (36.4%) and 7 recurrences in group 2 (19.4%). No statistically significant difference was found between surgical technique and recurrence

Table 1 Comparison of the results of two main techniques used in the surgical treatment of pilonidal sinus.

	Group 1 (n: 11)			Group 2 (n: 36)			p
	Excision and Secondary Wound Healing			Excision and Primer Closure			
	Mean	Min	Max	Mean	Min	Max	
Age (year)	15.1 \pm 1.3	13	17	15.8 \pm 1.1	13	18	0.129
BMI ^a	27.1 \pm 4.4	20	37	25.1 \pm 4.6	18	35.2	0.105
Duration of hospitalization (day)	2.2 \pm 0.4	2	3	2.3 \pm 1.2	1	6	0.925
Duration of pain (day)	8.5 \pm 12.3	1	45	7.3 \pm 5.0	1	21	0.448
Healing time (day)	71.8 \pm 42.1	30	180	26.8 \pm 12.5	10	60	<0.001**

**p < 0.05: statistically significant.

^a BMI: Body mass index.

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