Aksaray Üniversitesi Tıp Bilimleri Dergisi
ASUJMS, 2(3): 1-4

Araştırma Makalesi

Comparing of Surgical Techniques in Pilonidal Sinus Disease

Pilonidal Sinüs Hastalığında Cerrahi Yöntemlerin Karşılaştırılması

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ABSTRACT

Aim: Pilonidal sinus is commonly encountred in the sacrococcygeal areas and effects daily activities and life quality. Several surgical techniques and methods have been explained for the treatment of pilonidal sinus. In this retrospective study, we aimed compare clinical outcomes and complications of these methods.

Material and Methods: This retrospective study was performed over 136 sacrococygeal pilonidal sinus operations done between January 2014 and December 2015 in Ankara Atatürk Research and Training Hospital General Surgery Clinic-B.

Results: Mean age of the patients was calculated as 26,10. 121 (89%) of the patients were male and 15 (11%) were female. Total excision and leaving to secondary healing was applied to 88, total excision and primary repair to 23, Karydakis Flep to 9, VAC application to 8 and Limberg Flep to 7 of the patients involved in this study. Mean period of hospitalisation of VAC Application was longer than other surgical methods ($p<0,001$). Mean period of hospitalisation of patients that applied total anesthesia was shorter than patients applied spinal and local anesthesia but there is no statistically significant difference ($p>0,001$). Postoperative analgesia needs of patients that operated by Karydakis and Limberg Flep methods was less than other methods ($p<0,026$). There is no difference between patients in aspect of relaps ($p>0,05$). Postoperative complication ratio of flep techniques was higher than other methods ($p<0,001$). Total excision and leaving to secondary healing operation results in earlier return to work ($p<0,001$).

Conclusion: Methods applied in our clinic were compared in this study. %9,6 relaps was seen in all patients and there is no statistically significant difference between groups. There is no optimal treatment of sacrococygeal pilonidal sinus,and we are in conclusion that method of treatment should be chosen according to the size, occasion of infection or relaps and job of the patient.

Keywords: Pilonidal Sinus, Flep Techniques, Primary, Secondary, Karydakis, Limberg

ÖZET

Giriş: Pilonidal sinüs en sık sakrokoksigeal bölgede rastlanan ve günlük aktivite ve yaşam konforunu etkileyen bir hastalıktır. Bu hastalığın tedavisinde çok sayıda cerrahi teknik ve tıbbi metod tanımlanmıştır. Bu retrospektif çalışmada kliniğimizde uygulanan farklı cerrahi yöntemleri, bu yöntemlerin klinik sonuçları ve komplikasyonlarını karşılaştırmayı amaçladık.

Materyal ve Metot: Bu çalışma, Ocak 2014 ve Aralık 2015 tarihleri arasında Ankara Atatürk Eğitim Araştırma Hastanesi Genel Cerrahi Kliniği B Grubu'nda yapılan 136 pilonidal sinüs ameliyatı üzerinden retrospektif olarak yapılmıştır.

Bulgular: Çalışmaya dahil edilen 136 hastanın yaş ortalaması 26,10±8,73 (15-70) olarak hesaplandı. Çalışmaya dahil edilen hastaların 121'i (%89) erkek ve 15'i (%11) kadındı. Çalışmaya dahil edilen hastaların 88'ine total eksizyon ve sekonder iyileşmeye bırakma, 23'üne total eksizyon ve primer onarım, 9'una karydakis flep kaydırma, 8'ine VAC uygulaması, 7'sine ise Limberg Flep kaydırma işlemleri uygulanmıştır. VAC uygulamasının hastanede kalış ortalaması diğer ameliyat tiplerine göre istatistiksel olarak anlamlı derecede daha yüksektir ($p<0,001$). Karydakis ve Limberg Flep operasyonu uygulanan hastaların postoperatif analjezi ihtiyacı diğer metotların uygulandığı hastalara göre düşüktür ($p<0,026$). Metotlar arasında nüks açısından istatistiksel anlamlı fark yoktur ($p>0,05$). Flep tekniklerinin postoperatif konplikasyon oranı diğer tekniklere göre daha yüksektir ($p<0,001$). Total eksizyon ve sekonder iyileşmeye bırakma yöntemi daha erken işe dönüş süreleri ile sonuçlanmıştır. ($p<0,001$).

Sonuç: Bu çalışma ile pilonidal sinüs tedavisinde kliniğimizde uygulanan yöntemler karşılaştırıldı. Olgular arasında erken dönem nüks bakımından anlamlı fark olmayıp %9,6 oranında nüks saptanmıştır. Sakrokoksigeal pilonidal sinüs hastalığında optimal tedavi yöntemi bulunmayıp, tedavi yönteminin her bir hastanın pilonidal sinüs lezyonunun büyüklüğü, nüks vaka ya da enfeksiyon olup olmadığı ve mesleki durumu göz önüne alınarak hastaya göre belirlenmesi gerektiği kanaatindeyiz.

Anahtar Kelimeler: Pilonidal Sinüs, Flep Teknikleri, Birincil, İkincil, Karydakis, Limberg

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Geliş tarihi: 07.08.2021
Kabul tarihi: 27.10.2021

INTRODUCTION

Pilonidal sinus had been described over 100 years ago and it is a disease that been encountered mostly in sacrocoxygeal area, affecting daily activities and comfort and causing great loss of workpower. Ideal treatment method is still being searched and relaps ratios are still high, although there are many surgical and conservative methods were decribed (1, 2).

Many theories were produced and many heated debates were made over describing the ethiology of the disease. Answers were searched over 20th century about whether this disease was congenital or acquired. In the present day, it is thought that this disease is an acquired disease (3).

Debates are not limited to ethiology. Although modern surgery came to an agreement over many important diseases, treatment of pilonidal sinus is still a debated area. But principals of treatment are certain that simple methods leading to short hospitalization, lower pain, complications and relapses should be chosen. Also faster return to normal life and work should be targeted.

Process on the gap after sinüs excision is polemical (4). Excision and primary repair, marsupialisation and various flep techniques are methods that developed for treatment of pilonidal sinüs (1). Debates continue over treatment methods because of their advantages and disadvantages, absence of superiority between each other and continuous emerge of new methods.

The aim of this study was to elucidate the debates over method choosing by retrospective comparing of surgical methods applied on 136 patients operated because of pilonidal sinüs in our clinic between January 2014 and December 2015.

MATERIALS AND METHOD

Study design and data collection

This retrospective study was made by analyzing 136 pilonidal sinus cases operated between January 2014 and December 2015 in Ankara Atatürk Research and Training Hospital General Surgery Clinic-B. In this period there were 151 pilonidal sinus operation cases in our clinic but 15 of those were excluded from the study because of insufficient data. Surgical method, age, gender, hospitalization period, requirement of postoperative analgesia, early relaps, complications, time to return to work and anesthesia method were evaluated and compared. All of the ethical considerations had been strictly followed in accordance with the 1964 Helsinki declaration. As a standard care/action of the hospitals, it has been recognized from the patient records that all of the studied patients had given informed consents at the time of hospitalization and before the operation.

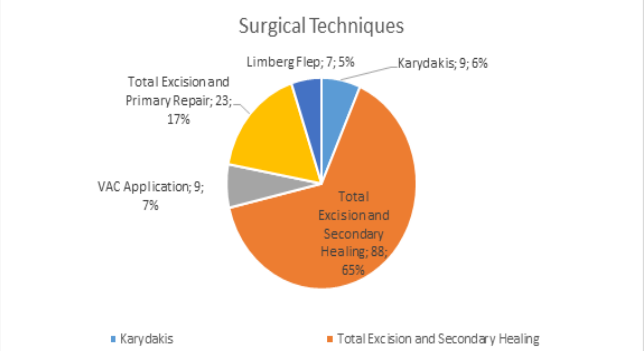
Statistical analyses

Statistical analyses were performed using the SPSS software version 20. The variables were investigated using visual (histograms, probability plots) and analytical methods (Kolmogorow-Simirnov/Shapiro-Wilk's test) to determine whether or not they are normally distributed. Descriptive analyses were presented using means and standard deviations for normally distributed variables. Comparisons were made using the t test, chi-square test, Fisher's exact test, MANN-Whitney u and analysis of variance. Values of $p < 0.05$ were considered statistically significant.

RESULTS

In this study 136 patients were evaluated retrospectively. Mean age of patients was 26.1 (15-70). Of those patients, 121 (89%) were males and 15 (11%) were females. 88 total excision and secondary healing, 23 total excision and primary repair, 9 Karydakis Flep Procedure, 8 VAC application and 7 Limberg Flep Procedure were applied to those 136 patients as depicted in figure-1.

Figure 1. Distrubition of surgical techniques applied



Most frequent surgical technique in our study was total excision and secondary healing (64.8%). General anesthesia was applied to 2.2% of patients and all those were total excision procedure. 33.1% spinal anesthesia and 64.7% of the patients underwent local anesthesia. 79.5% of local anesthesia patients were treated by total excision and secondary healing and 17.4% by total excision and primary repair method. Local anesthesia was statistically significantly more applied in both primary repair and secondary healing method after total excision ($p=0,018$).

Hospitalization periods of VAC patients were statistically significantly longer than other procedures ($p<0,001$). Analgesic requirement of Karydakis and Limberg Procedure patients was statistically significantly lower ($p<0,026$). There was no statistically significant difference between methods in aspect of relapse ($p:0.351$). Complications ratio of flep procedures were statistically significantly higher ($p<0,001$). Total excision and secondary healing method provides statistically significantly shorter time to return to work ($p<0,001$). (Table-1)

DISCUSSION

Pilonidal sinus disease was first described at 1883 by Mayo (5). This disease is a chronic infective disease commonly seen in anal and sacrococygeal region. It is especially seen in 2nd and 3rd decades and in males (6). Still no optimal treatment method could be agreed on by surgeons (7).

Pilonidal sinus disease was encountered on 1.1% of male students and 0.11% of female students in a study carried on Minesota College (8). In this study, the disease was seen in predominantly young males (1/7.8). Also in our study 89% of patients were males and overall mean age was 26.1. This shows that our patients showed similar sociodemographic specialities with patients evaluated in similar studies (9-11).

Table 1: Overall Aspect

			Analgesia			Postoperative Complications					Anesthesia Method		
	Count	Mean Time+SD Passed in Hospital (Days)	No	Yes	Mean Analgesics Application Count+SD	Early Relapse	Serous Collection	Wound Infections	Wound Dehiscence	Mean Return to Work Time (Days)+SD	Local	Spinal	General
Karydakis	9 (6.6%)	2,5+1.2	5	4	2.4+1.3	1	3	1	0	21,3+5.8	3	6	0
TTL Exc Sec	88 (64.8%)	1+0.7	78	10	1.0+0.8	0	0	4	0	7,2+3.2	70	15	3
VAC Application	9 (6.6%)	7.2+3.4	8	1	7.2+3.4	0	0	0	0	25,6+6.8	0	9	0
TTL Exc Prm	23 (16.9%)	1+0.5	20	3	1.0+0.6	5	5	3	4	18,1+6.2	15	8	0
Limberg Flep	7 (5.1%)	2,3+1.2	4	3	2.2+1.1	7	2	1	1	20+6.7	0	7	0
Total	136	1,6+1.5	115	21	1.5+1.1	13	10	9	5	11,79+4.5	88 (64.7%)	45 (33.1%)	3 (2.2%)
P		<0,001	0,026		<0.001	0,351		0,109		<0,001		0,018	

TTL Exc Sec: Total Excision and Secondary Healing
TTL Exc Prm: Total Excision and Primary Repair

Most frequent preferred surgical method in our clinic was total and excision and leaving to secondary healing (64.8%). Local anesthesia was performed to 64.7% of patients. 79.5% of those were left to secondary healing and 17.4% were primarily repaired after total excision of the sinus. In terms of these we saw that short and easily performed anesthesia and surgical methods were especially preferred. Also total excision and leaving to secondary healing method's being able to be easiliy performed with local anesthesia was thought to lead the selection of this ansesthesia method. Some authors don't prefer total excision and primary and secondary healing methods noting that scar tissue stays in midline, stretches while walking and sitting, infections develop due to potential space under incision and thus relapse rates are unacceptabily higher due to this concerns (12-14). Relaps after primary repair was reported between 0-42% rates in different studies (15, 16). Actually high relaps rates are unacceptable in pilonidal sinus surgery. Relaps rate was reported as 0-5% after frequently applied nowadays Limberg Flep method (2, 17). In our study total excision and leaving to secondary healing procedure seems to be the method that patients return to work in the shortest time. Thus it was thought to be the most preferred method in our clinic because of the compensation of patients' willing for returning to work in shorter periods.

Hospitalization periods after total excision and primary repair were reported as 1.11 days meanly (between 1-4 days) over 162 patients in the study of Kaya et al. supporting our study (18). Early wound healing is an advantage of primary repair method unless infections develop but limiting of daily activities due to tissue tension and long hospitalization periods when infections develop are the disadvantages on the other hand (19).

In a study comparing primary repair and Limberg Flep operations considering postoperative wound infections, it was reported that infections were approximately 10 times less in Flep procedure (20). But in our study it was seen that there was statistically significantly more infections and other wound complications in flep procedures ($p<0,001$).

Longer hospitalization periods of VAC patients were thought to be related with the necessity of in-hospital application of the electronic device. Because new wound clothing is needed in every 2-3 days and this shuld be done by healtcare professionals. VAC's being more applied to big, infected and relapsed cases lead to limitation of usage of this technique. No stance of complications or early relapses in VAC patients encourages us to use this technique in such problematic cases even hospitalization periods are longer. VAC application is reported to contribute faster wound diminution but not to affect overall healing time in the study of Biter et al comparing VAC with other methods (21).

Lower need of post-operative analgesics in Karydakis and Limberg Flep procedure patients was thought to be linked with spinal anesthesia applied for operation. Higher post-operative analgesics requirement was thought to be linked with faster loss of local anesthetics effect although operations done by this anesthesia were less complicated and smaller. VAC application required serious analgesic drug administration. This stuation was thought to be related with the continuous negative pressure and foreign body in the wound.

Statistically significantly more post-operative complications seen in Flep procedures were thought to be related with patient habituations. Negligence in wound care and incoordination with wound care rules were commonly seen in our patients. Inconvenient situations like these were seen to be related with more complications in Flep procedures. On the other hand these inapropriate conditions were thought to bu better tolerated in wounds leaved to secondary healing because these wounds are open and daily wound care is made till complete healing is achieved. In the study made by Hoehn et al., relaps rate was reported as 7% in Limberg Flep procedure patients after 5 years follow-up (22). Relaps rates about Limberg Flep procedure were reported between 0% and 7% in different studies. In our study, although all of Limberg Flep patients showed early relapses, after revision there were seen no long-term relapses which is coherent with similar studies.

CONCLUSION

It is seen that none of the methods are perfect for pilonidal sinus treatment when the data originated from our study is compared with the literature. In order to mention a method as successful in pilonidal sinus treatment it should be simple, painless, satisfactory, cheap, in need of shorter hospitalization and return to work periods and at low rate of relapses. It is thought that it should be considered when determining the surgical technique whether the lesion big, infected, relapsed or not. By the way an inappropriate method for a patient may be perfect for another. Personal advices to every patient should be made about critical aspects in disease

management such as wound care, hygiene and epilation.

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