



Original Article

Incidence of fistula after management of perianal abscess



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ABSTRACT

Background: Perianal fistula is among the most common anorectal diseases encountered in adults, men are more prone to be affected than women. There is a close relationship of abscess and fistula in etiology, anatomy, pathophysiology, therapy, complications and morbidity, it is appropriate to consider them as one entity.

Aim of study: To determine the incidence of fistula formation and recurrent abscess in a sample of Iraqi patients in Baghdad and decide whether primary fistulotomy should be performed at the time of incision and drainage of perianal abscesses.

Patients and methods: A retrospective study of 68 patients with perianal abscess operations conducted in Baghdad. They underwent incision and drainage under either local or general anesthesia at Al-Kindy Teaching Hospitals and private hospitals over a 15-year period from January 2000 to December 2015. Their ages ranged from 20 to 68 years (40.21 ± 1.34) males (63/68) (92.64%) were more than females (5/68) (7.35%). Patients were treated with incision over the abscess under anesthesia and drainage of the abscess was done. The patients were followed up for an average 18 months (range 12–24 months) after abscess drainage or until a fistula appeared and abscess recurrence.

Results: The study group comprised of 68 (92.64%) patients with perianal abscess with a median age 39 years (range 20–68 years). The mean follow-up period was identified to be 18 months (range 12–24 months). Males (63/68) (92.64%) were more than females (5/68) (7.35%). The incidence of fistula formation after follow up, the patients with perianal abscess after incision and drainage was 31/68 (45.58%) and males (30/31) (44.11%) were more than females (1/31) (1.47%). The most common site was posterior then left lateral position. The percentage of patients with recurrent abscess $n = 6$ (8.82%) were lower than fistula formation $n = 31$ (45.58%). The percentage of males $n = 4/6$ (5.88%) were more than females 2/6 (2.94%).

Conclusions: The incidence of anal fistula in a sample of Iraqi patients with perianal abscess was 45.58% and percentage of recurrence of perianal abscess was 8.82%. To avoid division of

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anal sphincter muscle, secondary fistulotomy is advised to be done later when anal fistula will be formed.

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Incidência de fistulas em seguida ao tratamento de abscesso perianal

R E S U M O

Palavras-chave:

Fístula
Perianal
Abscesso

Experiência: A fistula perianal está entre as mais comuns doenças anorretais observadas em adultos; os homens demonstram maior tendência para serem afetados, em comparação com as mulheres. Existe íntima relação entre abscessos e fistulas em termos e etiologia, anatomia, fisiopatologia, tratamento, complicações e morbidade; assim, é cabível considerá-los como uma mesma entidade.

Objetivo do estudo: Determinar a incidência de formação de fístulas e de abscesso recorrente em uma amostra de pacientes iraquianos em Bagdá, e decidir se a fistulotomia primária deve ser realizada por ocasião da incisão e drenagem de abscessos perianais. **Pacientes e métodos:** Estudo retrospectivo de 68 pacientes com operações para abscesso perianal realizadas em Bagdá. Foi realizada incisão e drenagem sob anestesia local ou geral no Hospital-Escola Al-Kindy e em hospitais privados ao longo de um período de 15 anos, de janeiro de 2000 até dezembro de 2015. As idades variavam de 20 a 68 ($40,21 \pm 1,34$) anos. Havia maior número de homens (63/68) (92,64%) do que de mulheres (5/68) (7,35%). Os pacientes tiveram o abscesso tratado sob anestesia, e foi realizada a drenagem do abscesso. Os pacientes foram monitorados, em média, durante 18 meses (variação, 12-24 meses) após a drenagem do abscesso, ou até o surgimento de uma fistula e recorrência do abscesso.

Resultados: O grupo de estudo compreendeu 68 (92,64%) pacientes com abscesso perianal, com idade mediana de 39 anos (variação, 20-68 anos). O período médio de seguimento foi de 18 meses (variação, 12-24 meses). Havia maior número de homens (63/68) (92,64%) versus mulheres (5/68) (7,35%). No seguimento, a incidência de formação de fistula nos pacientes com abscesso perianal após a incisão e drenagem foi de 31/68 (45,58%), e os homens foram mais afetados (30/31) (44,11%) versus mulheres (1/31) (1,47%). O local mais comum foi a posição posterior e, em seguida, a lateral esquerda. O percentual de pacientes com abscesso recorrente (6, 8,82%) foi mais baixo do que o percentual para pacientes com formação de fistula (31, 45,58%). O percentual de homens (4/6, 5,88%) foi maior versus mulheres (2/6, 2,94%).

Conclusões: A incidência de fistula anal em uma amostra de pacientes iraquianos com abscesso perianal foi de 45,58% e o percentual de recorrência de abscesso perianal foi de 8,82%. Para evitar a divisão do músculo esfíncterico anal, é aconselhável fazer uma fistulotomia secundária mais tarde, quando a fistula anal já estiver formada.

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Introduction

Fistula is among the most common anorectal diseases encountered in adults, Men are more prone to be affected than women.¹ There is a close relationship of abscess and fistula in etiology, anatomy, pathophysiology, therapy, complications and morbidity, it is appropriate to consider them as one entity.² A previous history of perianal abscess can usually be mentioned and drained either spontaneously or surgically under local or general anesthesia, thus a fistula-in-ano represents the chronic phase of ongoing perianal abscess.³ It is a common disease with an incidence of about 2 cases per 10,000 population per year and likely to occur between the ages of 30 and 50 years.⁴ Fistula in ano are either associated with

perianal abscess from outset or as a later sign in 26–37% of the time.^{5–7} After drainage the abscess, probe the corresponding anal crypt gently, looking for a fistula in ano. Primary fistulotomy may be attempted when it is identified and superficial.⁸ About 1000 primary fistulotomies were done during drainage of an abscess with no adverse results.⁹ One can suspect development of fistula later on when there is a prolonged drainage from an incision site beyond 2–3 months and abscess heals and recurs at the same first location.¹⁰ Abscess recurrence and later on fistula formation is due to insufficient drainage and late onset drainage.^{11–13} The incidence of fistula following an abscess incision and drainage was 26% and incidence of recurrent abscess was 37%.^{14,15} The anal canal should be searched properly at the time of drainage and probe the anal crypt gently looking for fistula. If a fistula is identified and is quite

Table 1 – Incidence of fistula in ano and recurrent abscess after follow-up patients with perianal abscess.

Patients with perianal abscess, n = 68						
Cure n = 31 (45.58%)		Fistula formation n = 31 (45.58%)		Recurrent abscess n = 6 (8.82%)		
Males n (%)	Females n (%)	Males n (%)	Females n (%)	Males n (%)	Female n (%)	
29 (42.64)	2 (2.94)	30 (44.11)	1 (1.47)	4 (5.88)	2 (2.94)	
Initial sites						
Site	Males n (%)	Females n (%)	Males n (%)	Females n (%)	Males n (%)	Females n (%)
1. Posterior	11 (35.48)	5 (16.12)	16 (51.61)	3 (9.67)	4 (66.66)	2 (33.33)
2. Right lateral	5 (16.12)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
3. Left lateral	10 (32.25)	0 (0)	12 (38.70)	0 (0)	0 (0)	0 (0)

superficial, primary fistulotomy may be attempted using a loose seton of braided, nonabsorbable suture that inserted into the fistula tract, tied loosely to act as a drain. This is termed a “primary” or “synchronous” fistulotomy which is curative and avoid the need for subsequent fistula surgery.^{8,10} On the other hand, about two thirds of perianal abscesses never progress to fistulas and that a primary fistulotomy with its possible complications is usually unnecessary and the patients who are ideal candidates for primary fistulotomy are also the easiest to treat with delayed fistulotomy with subsequent low morbidity.³ Thus, the prudent rule would be to defer fistulotomy until the fistula becomes obvious.

The aim of this study was to assess the incidence of anal fistula and recurrent abscess after incision and drainage of perianal abscess in a sample of Iraqi patients in Baghdad and decide whether primary fistulotomy should be performed at the time of incision and drainage of anorectal abscesses.

Patients and methods

A retrospective study of 68 patients operated upon for perianal abscess conducted in Baghdad. They underwent incision and drainage under either local or general anesthesia at Al-Kindy Teaching Hospitals and private Hospitals over a 15-year period from January 2000 to December 2015. Their ages ranged from 20 to 68 years (40.21 ± 1.34) males (63/68) (92.64%) were more than females (5/68) (7.35%). The inclusion criteria were adults aged 18 years and above who presented with perianal abscess, while the exclusion criteria were patients under eighteen years, abscess with known fistula, complicated abscesses (multiple or bilateral abscess), Crohn’s disease, immunosuppression, malignancy, necrotizing fasciitis and disseminated tuberculosis. The Scientific and Ethical Committee of Al-Kindy Medical College and Hospitals had approved the study. Written informed consents were obtained from the patients with perianal abscesses.

Patients were treated with incision over the abscess under anesthesia (local or general) that allows thorough examination and drainage of the abscess and opening all loculi was done. The patients were followed up for an average 18 months (range, 12–24 months) after abscess drainage or until a fistula appeared and abscess recurrence.

Statistical analysis was done using MINITAB statistical software 13.20.

Results

The study group comprised of 68 (92.64%) patients with perianal abscess with a median age of 39 years (range 20–68 years). The mean follow-up period was identified to be 18 months (range 12–24 months). Males (63/68) (92.64%) were more than females (5/68) (7.35%). All of them had a perianal abscess managed by incision and drainage under anesthesia. Their duration of hospital stay was 1–2 days.

The incidence of fistula formation after following up the patients operated for perianal abscess was 31/68 (45.58%) and males (30/31) (44.11%) were more than females (1/31) (1.47%). The most common site was posterior then left lateral position as shown in Table 1. The percentage of patients with recurrent abscess $n=6$ (8.82%) were lower than fistula formation $n=31$ (45.58%). The percentage of males $n=4/6$ (5.88%) were more than females 2/6 (2.94%). The most common site was also posterior to anus. The percentage of cured patients, 31/68 (45.58%) was similar to percentage of patients who developed fistula, 31/68 (45.58%). Males were representing the higher percentage 42.64% than females 2.94%. posterior abscess represents the common site 35.48% followed by left lateral 32.25% and lastly the right lateral 16.12%.

Discussion

Abscess and fistula in ano are common cryptoglandular disease¹⁶ which is most common in people aged between 20 and 50 years with four-fold male predominance and an annual incidence of 1 in 10,000.¹⁷ That is in agreement with our results, males were (63/68) (92.64%) that is more than females (5/68) (7.35%). Their median age was 39 years. Abscess after incision and drainage may manifests later on as fistula in ano and recurrent abscess that require repeat surgical drainage. Thus, treating fistula at the same time may reduce the late sequel but this could affect the function of the anal sphincter in some patients who may not have later developed a fistula-in-ano.¹⁸ Our study showed that incidence of fistula in ano was 31/68 (45.58%) and males (30/31) (44.11%) were more than females (1/31) (1.47%). The most common site

was posterior then left lateral position. Regarding recurrent abscess, the percentage of patients was 6/68 (8.82%) that was lower than fistula formation 31/68 (45.58%). The percentage of males 4/6 (5.88%) was more than females 2/6 (2.94%) and the most common site was also posterior to anus. Our results in accordance with other results, that recurrent abscess and fistula formation occurred in 11% and 37% respectively. This supports the rule of secondary fistulotomy to avoid division of sphincter muscle in patients who would not need it.¹⁵ Other report showed that recurrence of abscess was 3.7% and fistula formation was 34.7%, so early aggressive treatment of abscess reduces the possibility of recurrence and further surgery.⁸ Lohsiriwat et al. (2010)¹⁹ found that the incidence of fistula-in-ano following incision and drainage of perianal abscess was 31%. Risk factors like sex, smoking, alcohol, fever, leukocytosis, and location of abscess were not prognostic and predictive of fistula formation. Patients aged less than 40 years and non-diabetic appeared to have a higher risk for fistula formation (43%). Regarding administration of perioperative antibiotics significantly reduced the rate of subsequent fistula formation to (17%). Meta-analysis study demonstrated that fistula surgery with abscess drainage significantly reduced fistula/abscess recurrence and need for further surgery.²⁰ Sainio (1984)¹ reported the incidence of anal fistula during ten years period per 100,000 population was 8.6 for nonspecific and fistula, 12.3 for males and 5.6 for females. He also reported that nonspecific fistulae accounted about 90.4%, the tuberculous fistulae about 0.2%, the postoperative and traumatic fistulae about 3.3% and fistulae originating in anal fissure about 3.3% and the occurrence of anal fistula after treatment of perianal abscess was 35% while in our study was (45.58%). Other study showed that the incidence of fistula-in-ano following perianal abscesses was 26% diagnosed either during follow-up or within 6 months.²¹ The differences of our study with other studies may be due to sample size, criteria of the patients selected in the study, duration of follow up, use of antibiotics, size and depth of the abscess and site of the abscess. In our study the most common location of the abscess was posterior, this is due to more frequent anal glands located posteriorly^{22,23} and more commonly found in males than females.²⁴ Thus disease is more common in males than females.

Conclusions

The incidence of anal fistula in a sample of Iraqi patients with perianal abscess was 45.58% and percentage of recurrence of perianal abscess was 8.82%. To avoid division of anal sphincter muscle, secondary fistulotomy is advised to be done later when anal fistula will be formed.

Conflicts of interest

The authors declare no conflicts of interest.

REFERENCES

- Sainio P. Fistula-in-ano in a defined population. Incidence and epidemiological aspects. *Ann Chir Gynaecol*. 1984;73:219–24.
- Abcarian H. Anorectal infection: abscess – fistula. *Clin Colon Rectal Surg*. 2011;24:14–21.
- Whiteford MH. Perianal abscess/fistula disease. *Clin Colon Rectal Surg*. 2007;20:102–9.
- Zanotti C, Martinez-Puente C, Pascual I, Pascual M, Herreros D, García-Olmo D. An assessment of the incidence of fistula-in-ano in four countries of the European Union. *Int J Colorectal Dis*. 2007;22:1459–62.
- Read DR, Abcarian H. A prospective survey of 474 patients with anorectal abscess. *Dis Colon Rectum*. 1979;22:566–8.
- Henrichsen S, Christiansen J. Incidence of fistula-in-anocomplicating anorectal sepsis: a prospective study. *Br J Surg*. 1986;73:371–2.
- Nelson R. Anorectal abscess fistula: what do we know? *Surg Clin N Am*. 2002;82:1139–51.
- Ramanujam PS, Prasad ML, Abcarian H, Tan AB. Perianal abscesses and fistulas. A study of 1023 patients. *Dis Colon Rectum*. 1984;27:593–7.
- McElwain JR, MacLean MD, Alexander RM, Hoexter B, Guthrie JF. Anorectal problems: experience with primary fistulectomy of anorectal abscess: a report of 1000 cases. *Dis Colon Rectum*. 1975;18:646–9.
- Ramanujam PS, Prasad ML, Abcarian H. The role of Seton in fistulotomy of the anus. *Surg Gynecol Obstet*. 1983;157:419–22.
- Onaca N, Hirshberg A, Adar R. Early reoperation for perirectal abscess: a preventable complication. *Dis Colon Rectum*. 2001;44:1469–73.
- Chrabot CM, Prasad ML, Abcarian H. Recurrent anorectal abscesses. *Dis Colon Rectum*. 1983;26:105–8.
- Yano T, Asano M, Matsuda Y, Kawakami K, Nakai K, Nonaka M. Prognostic factors for recurrence following the initial drainage of an anorectal abscess. *Int J Colorectal Dis*. 2010;25:1495–8.
- Scoma JA, Salvati EP, Rubin RJ. Incidence of fistulas subsequent to anal abscesses. *Dis Colon Rectum*. 1974;17:357–9.
- Vasilevsky CA, Gordon PH. The incidence of recurrent abscesses or fistula-in-ano following anorectal suppuration. *Dis Colon Rectum*. 1984;27:126–30.
- Parks AG. Pathogenesis and treatment of fistula-in-ano. *Br Med J*. 1961;1:463–9.
- Malouf AJ, Cadogan MD, Bartolo DCC. Anal canal. In: Corson JD, Williamson RCN, editors. *Surgery*. London: Mosby; 2001. 3.21.1–26.
- Grace RH. Management of acute anorectal sepsis. In: Carter DC Sir, Russell RCG, Pitt HA, editors. *Atlas of general surgery*. 3rd ed. London: Chapman and Hall Medical; 1996. p. 826–33.
- Lohsiriwat V, Yodying H, Lohsiriwat D. Incidence and factors influencing the development of fistula-in-ano after incision and drainage of perianal abscesses. *J Med Assoc Thai*. 2010;93:61–5.
- Malik AI, Nelson RL, Tou S. Incision and drainage of perianal abscess with or without treatment of anal fistula. *Cochrane Database Syst Rev*. 2010;7:CD006827.
- Henrichsen S, Christiansen J. Incidence of fistula-in-ano complicating anorectal sepsis: a prospective study. *Br J Surg*. 1986;73:371–2.
- Abeyuriya V, Salgado LS, Samarasekera DN. The distribution of the anal glands and the variable regional occurrence of fistula-in-ano: is there a relationship. *Tech Coloproctol*. 2010;14:317–21.
- Seow-Choen F, Ho JM. Histoanatomy of anal glands. *Dis Colon Rectum*. 1994;37:1215–8.
- Lilius HG. Fistula-in-ano, an investigation of human foetal anal ducts and intramuscular glands and a clinical study of 150 patients. *Acta Chir Scand Suppl*. 1986;383:7–88.