The American Journal of Surgery (2014) 207, 907-914

The American Journal of Surgery®

Clinical Science

Pilonidal disease in a military population: how far have we really come?

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KEYWORDS:
Pilonidal disease;
Pilonidal cyst;
Pilonidal abscess;
Recurrence;
Complications;
Military

Abstract

BACKGROUND: Pilonidal disease (PD) has a long connection with military personnel, even nicknamed "jeep disease" during World War II. The aim of this study was to identify factors associated with recurrence and complications after surgery in a military population.

METHODS: A retrospective cohort analysis of operative therapy for PD at a single institution from 2005 to 2011 was conducted. Patient demographics, disease characteristics, and surgical methods were assessed for the primary outcomes of recurrence and morbidity.

RESULTS: A total of 151 patients with PD were identified, who underwent excision (45.7%), excision with primary closure (29.8%), and incision and drainage (9.9%). Overall recurrence and morbidity rates were 27.2% and 34.4%, respectively. Black race, chronic disease, wound infection, and infection and drainage were associated with recurrence ($P < .05$), and excision with primary closure was associated with increased complications ($P < .001$).

CONCLUSIONS: PD remains a significant source of morbidity and recurrence among military personnel. Certain patient-related and disease-related factors portend a worse prognosis, with black race and operative method the strongest predictors of outcomes.

Published by Elsevier Inc.

Symptomatic gluteal pilonidal disease (PD) is a potentially debilitating disease affecting approximately 70,000 patients annually in the United States alone.[1,2] PD is commonly described as a "disease of the young," because most patients are male and aged 15 to 30 years. It is therefore not surprising that PD has been, and continues to be, particularly common among military personnel. Although originally described in the early 1800s, it was during World War II when PD became a household name, responsible for about 80,000 hospitalizations among troops and earning the nickname "jeep rider's disease" because of its high incidence among jeep drivers.[1] To put its prevalence into perspective, PD accounted for a greater number of sick days in the US Navy in the 1940s than did hernia or syphilis. Many draft boards at the time would reject men with PD, which led to a great deal of focus on this debilitating chronic condition.[2] Although it is seemingly a problem of decades gone by, in many ways, little has changed.

Despite extensive experience and several trials, there is still a lack of consensus regarding the ideal treatment for gluteal PD, although there are a few general agreements.

The authors declare no conflicts of interest.

This report was presented at the 2013 Academic Surgical Congress, New Orleans, Louisiana, February 2013.

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Manuscript received April 1, 2013; revised manuscript June 27, 2013

0002-9610/$ - see front matter Published by Elsevier Inc.
http://dx.doi.org/10.1016/j.amjsurg.2013.07.038

First, asymptomatic disease likely requires no surgical intervention. Second, adequate surgical drainage is typically mandatory for acute abscesses.[3] However, recurrence rates for the disease vary, and data regarding recurrence and healing rates are generally reported with regard to a particular surgical intervention rather than underlying factors associated with the disease.[4] Studies have attempted to identify risk factors that contribute to the development of PD, as well as those that increase the risk for postoperative complications. To date, reported risk factors include male gender, obesity, sitting for prolonged periods of time, excess body hair, type of hair, and poor hygiene.[5,6] Other factors, such as body mass index, smoking, and lack of preoperative antibiotics have also been shown to increase the risk for postoperative infection.[5,7] Much of the research thus far has focused on factors that predispose patients to developing PD,[8] but studies specifically dedicated to the recurrence of disease outside of the management technique continue to be lacking.

The military is a population of young patients with diverse backgrounds in whom PD is more prevalent. In addition, distinctive aspects associated with the military health care system include ready access to medical care and a standardized captured follow-up. This provides a unique environment to study risk factors associated with both PD recurrence and the development of complications after surgical treatment.

Methods

We performed a retrospective chart review of patients who underwent surgical treatment for PD between December 2005 and September 2011 at Madigan Army Medical Center. Patients were identified through our internal electronic operating room management application system using International Classification of Diseases, Ninth Revision, codes 685.0 and 685.1 and Current Procedural Terminology codes 10061, 10080, 10081, 11770, 11771, 11772, and 14301. The cohort included active duty military personnel, retirees, and dependents (spouses and children) aged 10 to 80 years. Inclusion criteria required the diagnosis of PD and a surgical intervention. The surgical intervention was chosen on the basis of the operating surgeon's recommendation and the patient's informed consent. Patients with <6 months of follow-up documented in the military health care system were excluded, as were patients with Crohn's disease, concomitant perianal or gluteal pathology, umbilical PD, and uncertain diagnoses.

Data were collected through patient operative logs, dictated operative reports, and inpatient and outpatient electronic medical records. These included basic demographic and medical data (ie, age, race, gender, body mass index, age of onset of PD, prior interventions for treatment of PD, surgical indication, procedure performed, intraoperative findings, and preoperative and postoperative hygiene) as well as personal habits and potential risk factors for PD (ie, tobacco use at the time of surgery, family history of PD, occupation). Hygiene referred specifically to depilatory measures, such as shaving, waxing, chemical depilatories, or laser hair removal. The procedures performed at our institution were left to the discretion of the attending surgeon and include excision, excision and primary closure, incision and drainage (I&D), a combination of excision and I&D, excision and marsupialization, and the simple Bascom procedure. Excision involves the resection of all diseased tissue, including side tracts and midline pits, either to healthy tissue or to the presacral fascia. Wounds were closed primarily using subcutaneous absorbable sutures and interrupted nonabsorbable sutures at skin level (normally left in for 2 to 3 weeks). Marsupialization was performed using 2-0 or 3-0 Vicryl sutures (Ethicon Endo-Surgery, Somerville, NJ) from the skin to the base of the excision in interrupted fashion. Those allowed to heal by secondary intention underwent twice-daily wet-to-dry dressings with saline-soaked gauze. I&D involved opening an abscess cavity through an incision overlying the maximal point of fluctuance with irrigation, deloculation, curettage, and/or debridement of necrotic tissue as appropriate. Midline pits were left alone. The Bascom procedure combined a limited excision of midline pits with abscess drainage and curettage through a lateral incision. Patients undergoing flap repairs were excluded from analysis because of the small number of these procedures performed at our institution, used typically in the setting of multiple recurrences. Documented physical examinations from postoperative visits were used to determine time to wound healing by recording the date of examination and description of the wound (classified as "healed," "almost completely healed," "healing well," or "other"). Time to healing was calculated for patients only with wounds documented as either "healed" or "almost completely healed." The primary and secondary end points were recurrent PD and postoperative complications. Acute disease was defined by an acute abscess at the time of surgery or diagnosed <30 days before surgery. Chronic disease was the presence of symptomatic disease for >30 days. Acute on chronic disease was defined as symptomatic disease for >30 days but including an acute abscess. If the patient had undergone previous surgical procedures >30 days before surgery, this was considered a recurrence.

Additional data were obtained by telephonic interviews of all available patients included in the chart review. Attempts were made to contact all patients by calling the phone numbers listed in the outpatient electronic medical record. A standardized phone script was used to obtain consent and to interview patients. Interviews were performed by 2 of the investigators. Questions pertained to age at the time of diagnosis of PD, age at surgery, race, prior and subsequent interventions for PD, presence of multiple midline pits, presence of active drainage at time of surgery, hygiene (depilatory measures) preoperatively and postoperatively, most recent flare-up of PD, tobacco use at the time of surgery, family history of PD (relation to patient,