Linear Limb Sinus Tract in a Child

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CHRONIC draining sinus tracts and recurrent abscesses are usually associated with chronic inflammatory disorders (tuberculosis, fungal disorders), neoplasms, inflammatory bowel disease, and the presence of a foreign body. This report describes the case of a child who had recurrent gluteal and thigh abscess, with persistent draining sinus tracts that, in the final analysis, represented a subdermal linear limb sinus tract covering the entire length of the lower extremity. We believe this lesion is of congenital origin; review of the English literature did not reveal a similar case.

Report of a Case

A 5-year-old girl was admitted to the James Whitcomb Riley Hospital for Children on the Indiana University Medical Center campus on April 11, 1972, with the chief complaint of persistent purulent drainage from the right gluteal fold. The draining area had been present for two years and was initially thought to be related to an insect bite. A single culture of the drainage site done at another hospital was said to demonstrate acid-fast bacilli. Although isoniazid therapy was given for one year, the drainage persisted. At the time of the initial admission at the Riley Hospital, physical examination was unremarkable except for the presence of a right gluteal-fold abscess extending distally into the upper part of the thigh and a persistent draining sinus tract. The area was edematous, indurated; and erythematous. The patient’s temperature was 38°C; pulse rate, 100 beats per minute; respiration rate, 20/min; and blood pressure, normal. The hemoglobin level was 12 gm/100 ml; hematocrit, 34%; white blood cell (WBC) count, 15,000/cu mm. The differential WBC count showed a shift to the left. A chest x-ray film was unremarkable, and a contrast barium enema was normal. Tuberculin and histoplasmin skin tests were negative.

On April 13, incision and drainage of the abscess was performed. Histological examination of the tissue showed acute and chronic inflammation. Cultures obtained in the operating room grew several mixed forms of bacteria including *Staphylococcus aureus*. There was no evidence, however, of acid-fast bacilli or fungi. The patient was discharged from the hospital on April 22, taking oxacillin, 100 mg/kg/day.

Six months later (Sept 6), she was readmitted with the same chief complaint of draining abscess in the right gluteal fold and thigh. The physical examination was identical to that noted previously. The hemoglobin value was 11.4 gm/100 ml and the hematocrit, 33%. Urinalysis was unrevealing. The WBC count was 12,500/cu mm, with a normal differential cell count. Immunoglobulin electrophoresis and nitrosohistidine blue tests were normal. X-ray films of the chest, lumbar spine, and pelvis were unremarkable. Proctosigmoidoscopy showed no evidence of anorectal disease, and an intravenous pyelogram was also normal. The inflammation resolved with local therapy in the form of soaks and orally administered oxacillin, 100 mg/kg/day, and she was discharged on Sept 29.

The patient was admitted again on Dec 6, with recurrent abscess of the right gluteal fold. A sinogram was obtained and demonstrated a 5-cm sinus tract extending distally into the thigh. On Dec 7, the area was widely excised, and sutures were found at the base of the abscess. The wound was packed and left open. The foreign bodies (sutures) were considered the cause of the persistent problem. Postoperatively, she had elevations in temperature ranging from 38 to 39°C. Treatment included sitz baths, packing of the wound, and oxacillin therapy; gradual improvement resulted. She was discharged on Dec 20, with a normal temperature and a clean, granulating wound.

Six months later (June 13, 1973), she was readmitted to the hospital with a recurrent abscess in the right gluteal region. On June 14, wide, deep excision of the persistent area of induration and infection surrounding the abscess and granulation tissue was performed. A delayed primary closure was done on June 18. At this time, a small dimple of the right calf was noted just above the Achilles tendon. Exudate was observed coming from this point. A sinogram (Fig 1) was performed through the opening and disclosed communication through a long subdermal sinus tract passing up the entire length of the leg and thigh to the site of the recurrent gluteal abscess (Fig 1). On June 26, using a multiple stepladder incision technique, a 25-cm subdermal linear sinus tract was totally excised (Fig 2 to 4). Microscopically, the sinus tract was lined by squamous epithelium, with occasional sebaceous glands observed. The wounds healed primarily, and sutures were removed on the tenth postoperative day. The patient is now almost three years postexcision, with no evidence of recurrence.

Fig 1.—Sinogram of right lower extremity. Injection performed by small dimple in posteromedial aspect of right calf. Contrast material extends proximally to area of previous abscess and drainage.

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Comment

Several types of cysts and sinus tracts are related to embryological developmental anomalies. These include instances of thyroglossal duct cysts and sinuses, branchial cleft cysts and sinuses, dermoid cysts, and dorsal dermal sinus. These structures frequently become infected and may present annoying medical problems. Sinus tracts may also originate from an area of chronic inflammation and secondary infection, especially those related to a retained foreign body.

Chronic draining sinus tracts may also be associated with inflammatory disorders such as tuberculosis and fungal diseases, unsuspected neoplasms, and instances of inflammatory bowel disease (Crohn disease, ulcerative colitis). Immunodeficient syndromes and chronic granulomatous disease (WBC phagocytic deficiency) are also rare causes. These factors were carefully ruled out in the present case. Although a few mycobacteria were cultured initially at another hospital, other cultures from the wound failed to isolate tubercle bacilli. In addition, there was no histological evidence of tuberculous granulomas throughout the specimen. In the present instance, the young age of the patient, presence of a stratified squamous epithelial lining of the sinus tract, and lack of inflammation along the tract strongly suggest a congenital origin. Furthermore, sebaceous glands in the wall of the tract were similar to those seen in a dermoid cyst, which is considered to be the result of an embryological fault.