Spina Ventosa: An often Missed Diagnosis

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Abstract

Rare and varied presentations of tuberculosis make it difficult for treating clinicians to arrive at the diagnosis. An adolescent female presented to the orthopedic outpatient department with slowly increasing swelling over the dorsum of the hand near the base of the third digit for 5 months. With multiple consultations, she was being treated with antibiotics as a case of abscess. On examination, the swelling was soft bulging with whitish watery discharge. Plain radiography revealed periosteal elevation with bony destruction of the proximal phalanx. Magnetic resonance imaging revealed signal intensity changes with collection suggestive of infection. Blood investigations were within the normal limits, except slightly raised erythrocyte sedimentation rate. A differential diagnosis of chronic osteomyelitis was performed. Since the swelling was growing with the overlying skin likely to give way, it was treated with incision and drainage. Cytology with Gram's and auramine staining helped in confirming the diagnosis of spina ventosa. Biopsy is the gold standard for diagnosis, and antitubercular therapy forms the mainstay of treatment.

Keywords: Sausage digit, spina ventosa, tubercular dactylitis, tuberculosis of short bones

A 12-year-old female presented with slowly increasing swelling over the dorsum of the right hand near the base of the middle finger for 5 months, with a recent history of discharge. She also complained of dull aching pain and lethargy. There was no history of injury. She was being treated with antibiotics as a case of abscess. On examination, the swelling was soft bulging with whitish watery discharge. X-ray showed periosteal elevation with bony destruction of the proximal phalanx of the third digit. Chest radiograph was normal. Magnetic resonance imaging revealed signal intensity changes with collection suggestive of infection [Figure 1]. Hematological investigations were within the normal limits, except slightly raised erythrocyte sedimentation rate. The Mantoux test was positive. Chronic osteomyelitis, foreign body granuloma, mycotic, syphilitic dactylitis, and enchondroma formed differential diagnosis.[1-3] Since overlying skin was likely to give way, surgical incision and drainage was done.[4] The material obtained showed granulomas with giant cells and caseous necrosis on Gram's staining. Although ZN staining was negative, fluorescent auramine staining showed few tubercle bacilli, which helped in making the diagnosis.[5,6] Aerobic culture sensitivity and fungal KOH smear were negative. CBNAAT showed rifampicin sensitivity. Standard 4 drug antitubercular treatment (ATT) was given, as 4 months intensive, followed by 10-month continuation phase.[7] The patient's hand was splinted in volar plaster for 4 weeks, followed by functional bracing. Clinical

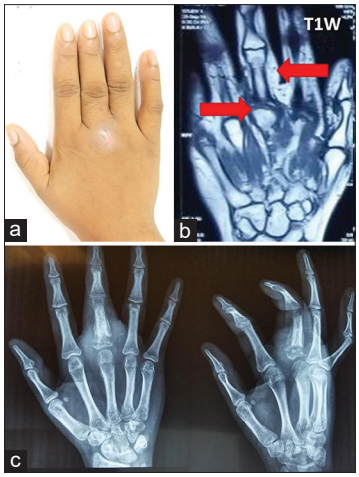

Figure 1: (a) Clinical, (b) Magnetic resonance imaging, and (c) Radiological picture at presentation

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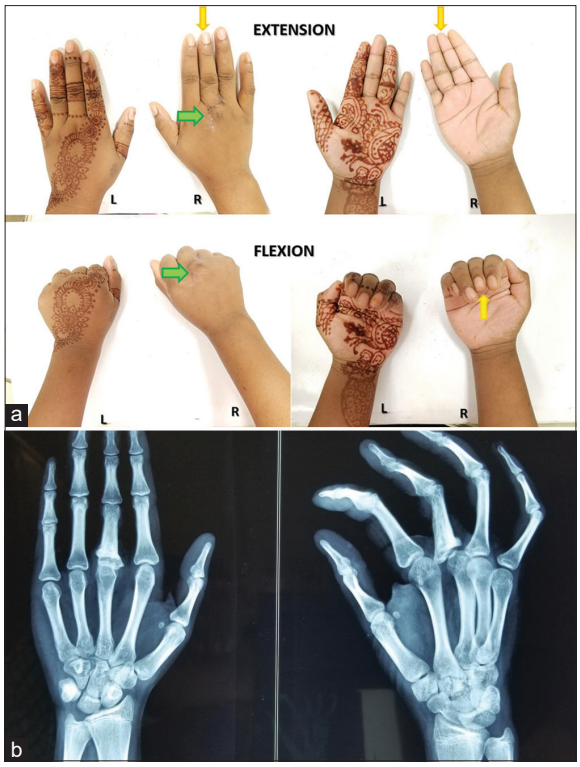

Figure 2: (a) Functional outcome and (b) Radiological picture at 2 years of follow-up

and radiological assessment was done up to 2 years [Figure 2]. The lesion completely healed with no residual deformity, except slight shortening owing to bony destruction.

Tubercular dactylitis leads to endosteal destruction and subperiosteal new bone formation resulting in spindle-shaped ballooning of short bones earning the name sausage digit or spina ventosa (Latin for wind-filled digit).[8,9] Several researchers have presented this rare case, but with the use of ATT, incidence has drastically reduced [Table 1]. Hence, a high index of suspicion is needed for arriving at the diagnosis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

Table 1: A review of cases of spina ventosa reported in the literature (PubMed) over the past 70 years

Researcher	Year	Number of cases
Cansu DU *et al*.	J Clin Rheumatol. 2020	1
Rekik S *et al*.	Rheumatology (Oxford). 2018	1
Thatoi P *et al*.	J Clin Diagn Res. 2017	1
Bishnoi A *et al*.	Rheumatology (Oxford). 2017	1
Fairag R *et al*.	J Orthop Case Rep. 2016	1
Abebe W *et al*.	Ethiop J Health Sci. 2016	1
Sharma S *et al*.	Indian Dermatol Online J. 2015	1
Baeza-Trinidad R *et al*.	N Engl J Med. 2015	1
Bhasker *et al*.	Adv Biomed Res. 2013	1
Bandyopadhyay R *et al*.	Open Orthop J. 2012	1
Muratori F *et al*.	J Foot Ankle Surg. 2011	1
Malik S *et al*.	Indian J Tuberc. 2009	7
Patra SR	Postgrad Med J. 2009	1
Gyanshankar PM *et al*.	Indian J Tuberc. 009	1
Singh JK	Indian Pediatr. 2009	1
Kothari PR *et al*.	Indian J Chest Dis Allied Sci. 2004	1
Subasi M *et al*.	Ann Plast Surg. 2004	2
Andronikou S *et al*.	Arch Dis Child. 2002	1
Rasool MN	J Pediatr Orthop. 2001	6
Mittal R *et al*.	J Bone Joint Surg Br. 1999	1
Vervest TM *et al*.	Acta Orthop Scand. 1998	1
Rigauts H *et al*.	J Belge Radiol. 1989	1
Foasso MF *et al*.	Arch Fr Pediatr. 1985	1
Benkeddache *et al*.	J Hand Surg Am. 1982	2
Pepersack F *et al*.	Acta Clin Belg. 1979	2
Polivka D	Acta Chir Orthop Traumatol Cech. 1977	1
Maherzi H *et al*.	Tunis Med. 1973	1
Feldman F *et al*.	Am J Roentgenol Rad Ther 1971	7
Robbins RHC	Br J Surg 1967	17
Popov V	Khirurgiia Sofiia. 1962	22
Pelbois F *et al*.	Sem Hop. 1961	1
Lefond EM.	J Bone Joint Surg [Am] 1958	6
Melnotte P *et al*.	Rev Med Nancy. 1950	1
Thrap Meyer H	Acta Orthop Scand. 1950	1

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