

## Case report

### **Sternocleidomastoid pyomyositis mimicking parotid abscess**

*Soleh MN, M Irfan*

#### **Abstract**

Pyomyositis is a condition of acute bacterial infection of skeletal muscle. It is commonly seen in tropical region, and the presentation depends on the site of involvement. We report a 72 year old lady presenting with swelling of left angle of mandible which mimicking left parotid abscess. Later on, imaging and operative findings proved it to be an intramuscular sternocleidomastoid abscess.

**Keywords:** Pyomyositis, mimic, parotid abscess.

---

#### **Introduction**

Pyomyositis is a primary bacterial infection of skeletal muscle and it is usually caused by staphylococcus infection. It mostly affect immunocompromised patient such as those with HIV infection, haematological disorder, patient on chemotherapeutic drug and diabetes. Pyomyositis is common and endemic in tropical region. Patient with diabetes has increase risk of infection and associated skeletal muscle damage.<sup>1</sup>

lobe. The overlying skin was inflamed. There was no palpable cervical lymphadenopathy. Needle aspiration from the swelling confirmed the presence of pus. Provisional clinical diagnosis of left parotid abscess was made. Patient then was subjected for computed tomography scan of parotid and upper neck and revealed left supraclavicular intramuscular abscess. Left parotid gland was pushed superolaterally and has normal density.

#### **Case Summary**

A 72 year old lady, a case of poorly controlled type II diabetes mellitus on presented to Emergency Department with complaint of one week history of left parotid region swelling which was associated with pain and fever. However she denied any history of dysphagia, shortness of breath and any swelling elsewhere in the body. There was no history of trauma, similar episode in the past, contact with tuberculosis patient or any ear symptoms present.



**Figure 1:** Swelling over left angle of mandible which displaced the ear lobe

Clinical examination revealed an 8 x 6 cm swelling at angle of left mandible which was tender, firm in consistency, non fluctuant and with displacement of left ear

Patient underwent incision and drainage under general anaesthesia. Intra operative finding confirmed the presence of pus within the left sternocleidomastoid. The

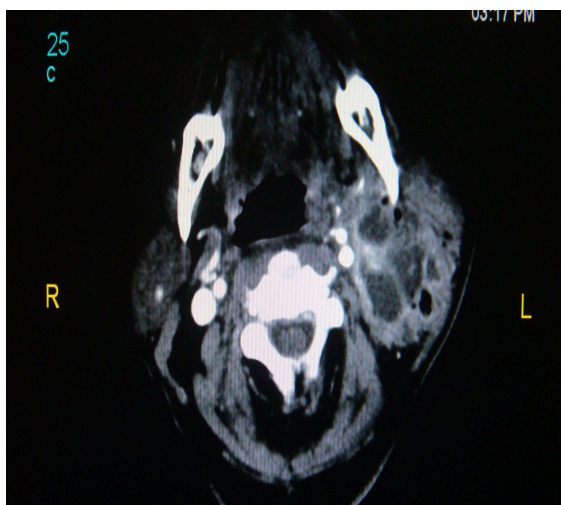
- 
1. Mohd Najeb Soleh,
  2. Irfan Mohamad,

Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kota Bharu, Kelantan, Malaysia.

**\*Corresponds to:** Dr Mohd Najeb Soleh, Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kota Bharu, Kelantan, Malaysia. **Email:** [najeb\\_azlina@yahoo.com](mailto:najeb_azlina@yahoo.com).

drained pus was sent for culture and sensitivity study.

Post operatively, daily dressings of open wound were done. Patient recovered well. Her diabetes control also improved. The culture of the specimen reported as *Klebsiella pneumonia*, which was sensitive to amoxicillin-clavulanate and second generation cephalosporin group of antibiotic.



**Figure 2:** Axial CT scan showed an ill-defined heterogenous lesion with septation within left sternocleidomastoid muscle.

### **Discussion**

Pyomyositis is a primary bacterial infection of skeletal muscle and it is usually caused by staphylococcus infection. It mostly affect immunocompromised patient such as those with HIV infection, haematological disorder, patient on chemotherapeutic drug and diabetes. HIV infection is most commonly associated with pyomyositis.<sup>2</sup> Pyomyositis is common and endemic in tropical region. Patient with diabetes has increase risk of infection and associated skeletal muscle damage.<sup>1</sup>

Clinically, pyomyositis can be divided into 3 stages.<sup>3</sup> The first stage is the invasive stage. In this stage patient may present with unspecific symptoms such minimal tenderness, fever and anorexia, which is generally neglected.

Later, the disease progress into second stage whom patient presenting with more prominent symptom such as more severe pain, painful swelling, limited muscle movement and fever. Most of the diagnosis is made during this stage. And the third stage is the systemic manifestations which include sepsis and its complication.

Pyomyositis can occur in any part of the body and according to Chiedozi in 1979, the commonest site involved is the lower limb.<sup>3</sup> The abscesses also more commonly located in the lower extremities.<sup>4</sup> And according to Bickel et al in 2002, involvement of neck muscle is very rare.<sup>5</sup> Only recently, 2 cases of sternocleidomastoid pyomyositis has been reported.<sup>2</sup>

The pathogenesis of pyomyositis is multifactorial.<sup>6</sup> However, the exact pathogenesis of pyomyositis is unknown.<sup>7</sup> Intact skeletal muscle is generally resistant to infection; however the mechanism of bacterial invasion not really understood.<sup>2</sup> According to Kathryn et al in 2010, 78% of the cultures were positive for Staphylococcus infection.<sup>4</sup> Diabetes has been an important predisposing factor for pyomyositis.<sup>1</sup>

When a patient presented with painful swelling over the parotid region, the differential diagnosis includes parotitis, sialoadenitis and parotid abscess. Displacement of the ear lobe is almost pathognomonic of parotid swelling. Other signs and symptoms of parotid abscess include painful swelling, fever, poor oral intake and indurated parotid swelling. Clinically a parotid abscess is not fluctuant due to parotid gland is covered by inelastic and thick capsule formed by investing layer of deep cervical fascia. With all these features, we initially concluded patient to have parotid abscess. To have intramuscular sternocleidomastoid pyomyositis mimicking parotid abscess is has not been reported yet.

Anatomically, upper part of sternocleidomastoid (SCM) muscle attached to mastoid and anterior aspect of SCM superiorly form the posterior boundary of parotid gland. And involvements of proximal part of SCM obviously, although rarely can mimic a parotid abscess.

Treatment of pyomyositis or abscess depends on the stage at presentation. The mainstay of the treatment is intravenous antibiotic and drainage of an abscess.<sup>7</sup> An early stage of pyomyositis, high dose of empirical antibiotic which cover *Staphylococcus aureus* may be sufficient.<sup>2</sup> They reported 2 cases of tropical pyomyositis of sternocleidomastoid treated with intravenous flucloxacillin and benzylpenicillin and both showed complete recovery on follow up. No specific duration of antibiotic therapy has been established.<sup>8</sup>

For stage 2 or suppurative stage, treatments include intravenous antibiotic and drainage of abscess. One reported case of small stage 2 pectoralis pyomyositis was treated with intravenous antibiotic alone, without drainage. During follow up, he was completely recovered with no sign of recurrence.<sup>9</sup>

In this patient, she was started empirically with intravenous amoxicillin clavulanic acid and metronidazole, before the abscess was confirmed and drained surgically. Pus and tissue culture and sensitivity reported as *Klebsiella pneumonia* which was sensitive to the empirical antibiotics.

In conclusion, the diagnosis of pyomyositis require high index of suspicious,<sup>7</sup> and any painful swelling in head and neck region, pyomyositis should be considered as one of the differential diagnosis, even in the presented case which clinically mimic a parotid abscess.

## References

1. Walling DM, Kaelin WGJ. Pyomyositis in patient with diabetes mellitus. *Rev Infect Dis* 1991; 13:797-802.
2. Collier S, Vig N, Collier J. Two cases of tropical pyomyositis of the sternocleidomastoid muscle occurring in the UK. *Br J Oral Maxillofac Surg* 2010;48:216-7.
3. Chiedozi LC. Pyomyositis. Review of 205 cases in 112 patients. *Am J Surg* 1979; 137:255-9.
4. Jacobsen KH, Fleming LC, Ribeiro PS. Pyomyositis in Amazonian Ecuador. *Trans R Soc Trop Med Hyg* 2010; 104:438-9.
5. Bickels J, Ben-Sira L, Kessler A, Wientroub S. Primary Pyomyositis. *J Bone Joint Surg Am* 2002; 84:A2277-86.
6. Seah MY, Anavekar SN, Savige JA, Burrell LM. Diabetic pyomyositis, an uncommon cause of a painful leg. *Diabetes Care* 2004; 27:1743-4.
7. Fox LP, Geyer AS, Grossman ME. Pyomyositis. *J Am Acad Dermatol* 2004; 51:308-14.
8. Lanternier F, Memain N, Lortholary O. Pyomyositis. *Orphanet Encyclopedia*;2004:1-5 (<http://www.orpha.net/data/patho/GB/uk-pyomyositis.pdf>)
9. Lopez –Rodriguez R, Campos-Franco J, Mallo-Gonzalez N, Alende-Sixto MR, Gonzalez-Quintela A. Sternocleidomastoid and pectoralis major pyomyositis in an immunocompetent patient. *Orthopedics* 2008; 31:1146.