

## Acute lymphangitis in a preschool child: A case report

Loh Huai Seng

**Abstract:** A 3-year old preschool boy presented with a pruritic red streak at the dorsum of his right foot traveling upward from the affected site which was red and swollen. Insect sting was the more likely trigger which had caused the cellulitis and subsequently the acute lymphangitis.

IeJSME 2012 6(2): 46-48

*Keywords: cellulitis, insect stings, lymphangitis, preschool child, streptococcal infections*

### Introduction

Lymphangitis is an inflammation of the lymphatic channels that starts off from an infection site distal to the channel. It can occur as a result of normal lymphatic channels with acute infection, damaged lymphatic channels or secondary to anatomic abnormalities. In primary care setting, it is commonly encountered in the adult population or amongst the school going children. However, in this case report, a preschool boy presented with an acute lymphangitis secondary to cellulitis most likely as a consequence of an insect sting.

### Case Report

On 20 April 2012, Madam YHA brought her son, ZY, to the clinic because of a rash which appeared on the dorsum of his right foot 2 days ago. The rash had been progressively visible, and Madam YHA was worried it could be something sinister. ZY is a 3 year old boy who attends daycare and nursery class in a private kindergarten. At the daycare center, the teachers admitted that ZY had some outdoor activities for the past few days, occasionally bare footed, but they were unsure if there was any insect bite on ZY's right foot.

One day before this, ZY happened to have mild runny nose, low grade fever and some cough. His mother had brought him to a general practitioner (GP), and the GP prescribed a few medications for him. One of the medications the GP gave him was, surprisingly, an antibiotic (amoxicillin-clavulanate) apparently to treat

his upper respiratory tract infection (URTI). However, she did not reveal to that GP about ZY's rash on his right foot. Only when the rash became more obvious, she decided to bring to the GP again, but the GP who saw him earlier was on leave. Hence Madam YHA brought ZY to see me.

As ZY is still very young, he could only complain of "pain" at the affected area, but he could not describe the pain in further details, neither could he tell if it was itchy in nature. However, his mother did notice ZY scratching on the lesion from time to time.

On examination, ZY had mild runny nose, but did not have fever (temperature was 36.8°C), cough or other constitutional symptoms. He was still very active and playful as usual, able to run around without showing any sign of pain. Pressure applied on the affected area did not yield any cry or discomfort from ZY, thus I deduced there was no tenderness as such. However, the affected area appeared mildly swollen, and a visible red streak at the dorsum of his right foot, extending from the base of the right fifth metatarsal region to 2cm anterior to the medial malleolus. Total length measured from the mid of the swollen area to the tip which it ended, was 8cm. There was also a tiny punctum at the affected site suggestive of an insect bite. There were no other rashes or skin changes noted elsewhere. Neither could I palpate any lymph node enlargement, thus ruling out lymphadenitis.

I advised mother to continue on and complete the course of antibiotic since he had already started taking it. A scheduled review for ZY was done in 2 days' time. Also, I encouraged mother to elevate ZY's right leg while sleeping, and performed some hot compression using warm towel on the affected site. On the 3<sup>rd</sup> visit to my clinic, I noticed that the redness and streak had completely resolved and the swelling fully subsided.

### Discussion

Cellulitis as a skin infection is pretty common in our community. Inflammation of the lymphatic channels

---

Department of Family Medicine, Clinical School, International Medical University, 70300 Seremban, MALAYSIA

*Address for Correspondence:*

Dr Loh Huai Seng, Lecturer in Family Medicine Department, Clinical School, International Medical University, 70300 Seremban, MALAYSIA  
Email: huaiseng@gmail.com

may occur as a secondary manifestation of infection at a distal site, hence lymphangitis or lymphadenopathy may be an associated finding in cellulitis.<sup>1</sup> This phenomenon is a result of the invasion of lymphatic vessels by pathogenic organisms, which subsequently travel along these channels toward the regional lymph nodes. Group A  $\beta$ -hemolytic streptococci are the most common source of cellulitis and lymphangitis, due to the elaborative effects of fibrinolysins and hyaluronidases. However, overt lymphangitis usually only develops as a consequence of wounds infected by more virulent pathogens such as *Staphylococcus aureus* or *Pseudomonas aeruginosa*.

Clinically, erythematous, irregular linear streaks (which may be both pruritic and tender) are seen extending from the primary site toward the draining regional nodes (Fig.1). The primary site may be an infected insect-bite wound or an area of cellulitis. If the involvement is more extensive, systemic symptoms such as fever, chills, and malaise may be present. Without appropriate antimicrobial therapy, cellulitis may develop or extend and serious complications like necrosis and ulceration may occur, with the resultant risk of bacteremia. Culture and gram stain of pathogens from the primary site will greatly aid in the selection of antimicrobial medications; however, presumptive initial therapy is necessary while awaiting the culture results.

In this case, there was no culture or swab done because of the absence of fever, erosions, pustules or crusts. Serological testing was also not indicated unless we suspected more serious infectious agents such as *Francisella tularensis* or *Histoplasma*. The primary site appeared to be, from history, more likely an insect bite mark, which subsequently developed into cellulitis then lymphangitis. Most of the cases reported previously

were mainly in adults.<sup>2</sup> Lymphangitis associated with the cellulitis in a 3-year old toddler is not commonly encountered in our primary care clinics. This could be partly because most toddlers stay indoors, as compared to adults or older children who take part in more outdoor activities. Hence the chances of getting such infection, which subsequently leads to lymphangitis, are less.

We know that the GP who had prescribed amoxicillin-clavulanate antibiotic for his URTI condition, might have indirectly treated the cellulitis, thus improving the lymphangitis over the next few days. The duration of antibiotic treatment for mild cellulitis is recommended as 5-10 days. In ZY's case, he completed the medication in 5 days.<sup>3</sup> Fig.2 and Fig.3 both show the progression of improvement in ZY's right foot, and complete resolution on day 7.

## Conclusion

Acute lymphangitis can manifest clinically in a spectrum of presentations, from mild to severe. As primary care doctors, we must educate the public, particularly the paediatric age group, to seek immediate medical attention if they present with unusual redness or swelling, red streaks which are getting worse and traveling proximally in the arms or legs, increasingly painful or having fever. It is a very potential treatable condition, but occasionally complications may set in.

## REFERENCES

1. Gunderson CG. Cellulitis: Definition, Etiology, and Clinical Features. *The American Journal of Medicine*. 2011; 124(12): 1113-22.
2. Ginsberg MB. Cellulitis: analysis of 101 cases and review of the literature. *Southern Medical Journal*. 1981; 74(5): 530.
3. Hepburn MJ, Dooley DP, Skidmore PJ, Ellis MW, Starnes WF, Hasewinkle WC. Comparison of short-course (5 days) and standard (10 days) treatment for uncomplicated cellulitis. *Archives of Internal Medicine*. 2004; 164(15): 1669.

Fig.1: An erythematous linear streak extending from primary infected site toward the draining regional lymph nodes. There is also slight swelling over the base of dorsum of 5<sup>th</sup> metatarsal area with a tiny punctum most likely due to insect sting (see arrow).



Fig.2: At day 3 in the clinic, the linear streak is still visible but the swelling has subsided.



Fig.3: At day 5 of consultation, the lesion has almost completely resolved.

