

# A Human Case of an Infection by the Pathogenic *Streptococci* that Causes “Strangles” in Horses

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## ABSTRACT

Strangles is a contagious upper respiratory tract infection primarily affecting equines. It is rare disease with zoonotic transmission. It is caused by the bacterium, *Streptococcus equi*. We present the rare case of strangles in an elderly patient complicated by bacteraemia, osteomyelitis and native valve endocarditis. The patient was treated successfully with appropriate antibiotics and no surgical intervention was needed. In an age of accelerated emerging zoonosis, this is an important entity clinicians should be aware of to prevent delay in diagnosis and poor outcome.

## LEARNING POINTS

- Strangles is a disease of equines, rarely it can affect the humans and can delay the diagnosis and management.
- This case represents the importance of thorough history taking and assessment.
- Use of an appropriate antibiotics can avoid surgical interventions in the some cases of Strangles.

## KEYWORDS

Strangles, osteomyelitis, zoonosis

## INTRODUCTION

Strangles is a contagious upper respiratory tract infection primarily affecting equines. It is caused by the bacterium, *S. equi*. We present the rare case of Strangles in an elderly patient complicated by bacteremia, osteomyelitis and native valve endocarditis. The patient was treated successfully with appropriate antibiotics and no surgical intervention was needed.

## CASE DESCRIPTION

Our patient is 62-year-old Caucasian male who has kept horses for decades in order to travel across the country and show them. He had close contact with them including changing the hay. He has been a chronic smoker for more than 30 years with chronic obstructive pulmonary disease (COPD). He denied any history of alcohol or any illicit drug use. His family history was non-contributory and had no known allergies. His complaints started about 3 weeks prior to admission, when he was experiencing intermittent fevers up to 39.4°C. Initially he visited an urgent care where he was prescribed azithromycin 500mg daily for 5 day and prednisone taper for presumed COPD exacerbation. His fevers subsided while on steroids but returned once he completed the treatment. At this point, the clinical course was complicated by

sudden onset neck pain with exacerbation on side-to-side movement. He was presented to an outside the hospital, blood cultures were drawn due to fevers and he was discharged with PO levofloxacin 750 mg daily for 7 days. Fourteen hours later, he was called and asked to get admitted due to *S. equi* bacteremia.

The patient complained of persistent neck pain and generalized weakness on admission. Vitals were within normal limits and there were no significant findings on systemic examination. There were no restrictions in neck movements or tenderness over the spine.

### Investigations and Treatment

Initial laboratory work showed leukocytosis of 18,000 with neutrophilic predominance and significantly elevated C-Reactive Protein of 21.61 mg/dl (Reference: Normal < 0.5mg/dl). Non contrast CT scan of cervical spine was negative for acute changes. *S. equi* isolated in blood cultures, was susceptible to ceftriaxone, penicillin and vancomycin. Patient was initially treated with empiric intravenous ceftriaxone 2 mg daily and vancomycin per protocol but this was later de-escalated to ceftriaxone. Transthoracic echocardiography revealed anterior mitral leaflet thickening that was reported as unchanged from previous imaging 3 years ago. Transesophageal echocardiography showed a freely mobile echo-density at the tip of the atrial aspect of the A2 scallop of the anterior mitral leaflet measuring 0.7 x 2.3 cm (Fig. 1). MRI of the cervical spine showed C3/C4 discitis/osteomyelitis with small epidural abscess (Fig. 2). No surgical intervention was recommended in absence of neurological findings on examination.



Figure 1. Transesophageal echocardiography showing vegetations over the mitral valve

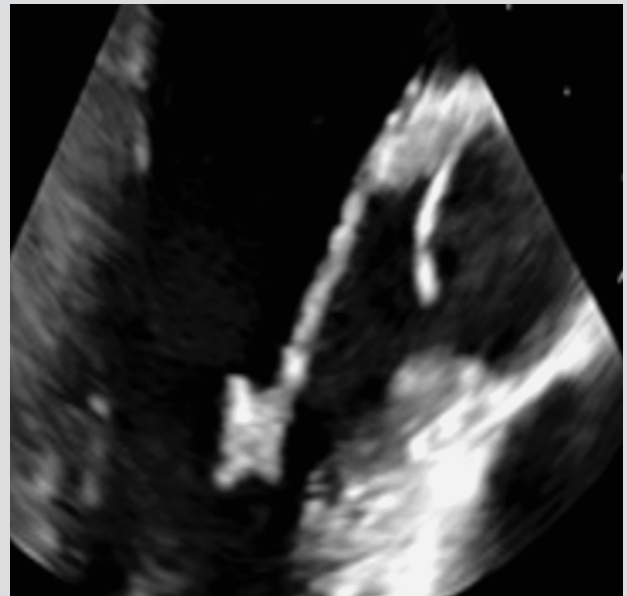


Figure 2. MRI of the cervical spine showed C3/C4 discitis/osteomyelitis with small epidural abscess

### Outcome and follow up

The patient completed the treatment with IV ceftriaxone 2 mg daily for a total of 6 weeks. His symptoms disappeared completely. CRP normalized. Repeat MRI of the cervical spine was deferred due to clinical recovery.

### DISCUSSION

Strangles, also known as adenitis equorum, is a contagious upper respiratory tract infection of horses and other grazing animals- cattle, sheeps, and pigs. It is caused by the bacterium, *S. equi*, and gets its name "Strangles" from the "strangled breathing sound" observed among the diseased horse<sup>[1]</sup>. The sound is produced due to profuse nasal discharge and localized swelling in the head and neck region of the horses. *S. equi*; subspecies *equi* is gram positive beta-hemolytic, catalase negative Lancefield group C streptococcus<sup>[2]</sup>. *S. equi* has an incubation period of 4-8 days. The mode of infection is via inhalation or ingestion of organisms from horses or via consumption of infected cheese, pork or unpasteurized milk products<sup>[3]</sup>. *S. equi* attaches to the cells in the crypts of lingual and palatine tonsils and causes release of the enzyme/toxin causing lymphadenitis/ abscess and secondary bacteremia with systemic infections.

The case series on human Strangles presenting as sepsis due to meningitis, septic arthritis and psoas abscess is described in the literature. The complications may include post streptococcal glomerulonephritis, pharyngitis, lymphadenitis, aortic aneurysm and toxic shock syndrome<sup>[4]</sup>. Penicillin G and cephalosporins are the treatment of choice and duration of the treatment depends on the extent of the infection and the severity of the organ involvement. Strangles is an emerging zoonotic disease and is important to recognize as it warrants aggressive investigation to rule out invasive processes, and to facilitate epidemiologic surveillance.

## CONCLUSION

This demonstrates a rare case of zoonotic transmission of *S.equi* infection complicated by bacteremia, cervical spine osteomyelitis and native mitral valve endocarditis. Patient was treated non surgically with intravenous ceftriaxone and had a positive outcome. The case reviewed here, re-emphasizes the importance of detailed history taking with details regarding occupation and possible environmental exposure. In an age of accelerated emerging zoonosis, this is an important entity clinicians should be aware of to prevent delay in diagnosis and poor outcome.

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