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# Correspondence

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## Acute rhinosinusitis and intraorbital abscess caused by *Citrobacter koseri* infection

To the Editor

We read with interest the recent paper by Fisher *et al.* [1] describing the isolation of *Citrobacter koseri* from nasal swabs of nine pig-exposed persons. The authors concluded that it is important to identify colonization of the nasal reservoir as it might cause endogenous infections [1]. *Citrobacter* species, belonging to the family Enterobacteriaceae, are environmental organisms commonly found in soil, water, and in the intestinal tracts of animals and humans. Rarely, *Citrobacter koseri* has been found in nasal cavities and paranasal sinuses: it has been isolated from frontal sinus lavage fluids of one healthy adult [2] and from tissue homogenization using nasal polyp samples from two patients with chronic polypoid rhinosinusitis [3], but not, as far as we know, from patients presenting with acute nasal symptoms. We isolated *C. koseri* from an intraorbital abscess complicating acute rhinosinusitis in an immunocompetent adult woman.

A 20-year-old woman came to the Otorhinolaryngology unit of Treviso Hospital (Italy) complaining of nasal obstruction together with swelling and erythema of the right upper and lower eyelids, which had lasted for 3 days and showed no improvement with oral antibiotics (1 g amoxicillin/clavulanic acid every 8 hours). Her medical history was unremarkable apart from an adeno-tonsillectomy performed 12 years earlier. Contrast-enhanced magnetic resonance imaging showed paranasal sinusitis and a 4 cm supero-medial right intraorbital abscess. On ophthalmological examination she had severe proptosis, ophthalmoplegia, and initial reduction of visual acuity in the right eye. After 36 hours of intravenous therapy with 3 g ampicillin/sulbactam every 6 hours and 3 mg betamethasone disodium phosphate every 12 hours, there was no significant clinical improvement. Drainage of the intraorbital abscess was performed with a purely endoscopic sinus surgery approach. Microbiological culture of pus [4] identified *C. koseri*. The strain was resistant to ampicillin but susceptible to several other antibiotics including ciprofloxacin (MIC $\leqslant 0{\cdot}062$ μg/ml) and gentamicin (MIC $\leqslant 1$ μg/ml). On this basis, our infectious disease consultant suggested using 750 mg ciprofloxacin every 12 hours for 10 days. After surgery and ciprofloxacin, the clinical picture improved rapidly with progressive reduction of eyelid swelling, proptosis and ophthalmoplegia. Ophthalmological examination now showed normal visual acuity. After 10 days of antibiotic therapy *C. koseri* was not isolated from a nasal swab.

Newborns and immunocompromised hosts are highly susceptible to *Citrobacter* infections [5]. *C. koseri* causes neonatal meningitis and brain abscesses with high mortality rates [6]. This pathogen rarely causes severe infections or abscesses in adults. Ours is the first reported case of acute sinusitis with intraorbital abscess caused by *C. koseri* infection in an adult immunocompetent woman. Lin *et al.* [7] reported two cases of iliopsoas abscess and one concurrent renal and liver abscess in adults; as with our case, their cases failed to respond to intravenous antibiotics and needed surgical management of their abscesses [7]. *C. koseri* is frequently resistant to ampicillin [8], as in our case. Our patient was a shop assistant and was not exposed to pigs; in Fisher *et al.*'s [1] series of pig-exposed subjects, nasal colonization by *C. koseri* was high (7·9%). We think that the presence of *C. koseri* should be considered in pig-exposed patients presenting with acute rhinosinusitis, so that the appropriate antibiotic treatment can be used to prevent development of severe complications of sinusitis.

## Declaration of Interest

None.

## References


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