

Ciprofloxacin-resistant *Aeromonas hydrophila* infection following leech therapy for venous congestion in free flaps: A Case Report and review of the literature

Robert Wenger¹, Philipp Stillhard², Alexia Cusini³, Alessia Lardi¹

¹Department of Plastic-, Reconstructive and Aesthetic Surgery, Cantonal Hospital Graubünden, Chur, Switzerland

²Department of Trauma Surgery, Cantonal Hospital Graubünden, Chur, Switzerland

³Department of Infectious Diseases, Cantonal Hospital Graubünden, Chur, Switzerland

Objective

Medical leech therapy is an option to treat surgically unsalvageable venous congestion in free flaps. *Aeromonas hydrophila* infection is a well-described complication of leech therapy in the literature. Ciprofloxacin is the most commonly recommended prophylactic antibiotic used to prevent *A. hydrophila* infections during leech therapy. We present a case report of a ciprofloxacin-resistant *A. hydrophila* infection following leech therapy.

Methods

A 42-year-old patient with a chronic wound on the lower distal leg and a non-union of the distal tibia was presented at our department. Debridement, additional plate fixation and soft tissue reconstruction with a free anterolateral thigh flap was performed.

Objective

Postoperative venous thrombosis of the flap pedicle occurred. Two revisional procedures were performed and leech therapy was initiated after the second revision due to venous congestion. During leech therapy for five days the patient was treated with ciprofloxacin. The whole flap survived. Two days later a wound infection was seen. Swab cultures revealed *Aeromonas hydrophila* resistant to ciprofloxacin. The infection was successfully treated with surgical debridement and antibiotic therapy with cefepime.

Conclusions

Infections after leech therapy are rare when using appropriate antibiotic prophylaxis and usually involve *A. hydrophila*. The current recommendation for antibiotic prophylaxis is ciprofloxacin. In recent years some case reports were published describing infections with ciprofloxacin-resistant *Aeromonas*^{1,2,3}. The potential risk for infections associated with leech therapy should not be underestimated. Based on the current literature, third-generation cephalosporins appear to be consistently effective against *Aeromonas* species^{1,2,3}. We therefore recommend ceftriaxone as a first-line choice for prophylactic treatment during leech therapy.

References

1. van Alphen NA, Gonzalez A, McKenna MC et al. Ciprofloxacin-resistant *Aeromonas* infection following leech therapy for digit replantation: report of 2 cases. *J Hand Surg Am.* 2014 Mar;39(3):499-502.
2. Patel KM, Svestka M, Sinkin J, et al. Ciprofloxacin-resistant *Aeromonas hydrophila* infection following leech therapy: a case report and review of the literature. *J Plast Reconstr Aesthet Surg.* 2013 Jan;66(1):e20-2.
3. Giltner CL, Bobenchik AM, Uslan DZ et al. Ciprofloxacin-resistant *Aeromonas hydrophila* cellulitis following leech therapy. *J Clin Microbiol.* 2013 Apr;51(4):1324-6.



Figure 1: Venous Congestion of free anterolateral thigh flap because of venous thrombosis. Appearance before revisional procedure.



Figure 2: Flap Appearance after 4 days of leech therapy



Figure 3: Flap Appearance 1 month after revisional surgery