

Orbital Cellulitis due to *Pseudomonas aeruginosa* in Renal Transplant Recipient

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ABSTRACT

Summary

A 43 year old renal transplant recipient had severe headache, fever and proptosis on 7 post-operative day. MRI head revealed oedematous orbit with opaque maxillary and ethmoid sinuses suggestive of sinusitis on same side. The culture of antrum wash out fluid from maxillary sinus e showed the growth of *Pseudomonas aeruginosa*. It was resistant to all antibiotics except gentamycin and amikacin. The patient expired 3 weeks after receiving new kidney.

Keywords: Renal Transplant Recipient; Orbital Cellulitis; Sinusitis; *Pseudomonas aeruginosa*

Introduction

In the first month post-transplantation period, the degree of immunosuppression is not high enough to get opportunistic infections. Thus, the most frequent infections are related to surgical and nosocomial complications. The common infections are bacterial and candidal wound infections, urinary tract infections, nosocomial pneumonias, and central venous catheter-associated bacteremias and fungemias. The orbital cellulitis due to *Pseudomonas aeruginosa* was reported in some immune-compromised patients. One report mentioned ecthyma gangrenosum -focal skin necrosis in orbital cellulitis was associated with septicaemia and death.

Case Presentation

The patient was 43 year old, a case of end stage renal disease due to diabetes mellitus. He had maintained on haemodialysis two times a week for 3 years while he was waiting for viral clearance for hepatitis B viral infection. He got antiviral therapy supervised by hepatologist. When his viral load was undetectable, he underwent transplant, donated from his brother. His brother also had hepatitis B viral infection and thus, he took treatment. The timing for transplant was planned only when the viral load of the donor was undetectable. The patient was still on Entecavir. The HLA matching was 100% compatible and CDC cross match was negative. The

transplant team decided to give lower dose of immunosuppressant as their HLA matching was excellent.

The immediate post-operative period was uneventful (Figure 1). He was on methyl prednisolone, tacrolimus, mycophenolate mofetil, trimethoprim- sulphamethoxazole, nystatin and cefopryazone-sulbactam according to our transplant protocol. The blood level of tacrolimus was monitored at 48 hour and we kept the level at lower side. His glycaemic control was okay. After 3 days intensive care at ICU, he was shifted to renal unit.



Figure 1.

Three days later, he had severe headache and fever. There was exophthalmos, chemosis and external ophthalmoplegia on tenth post-transplant day (Figure 2). He had complete ophthalmoplegia with pupil dilatation on left side (Figure 3). The vision was near normal. The eye was not pulsatile, and bruit was not detected. Orbital cellulitis due to bacteria was considered and thus we gave imipenem and metronidazole after taking blood culture. The dosage of tacrolimus and mycophenolate mofetil were reduced to improve his immunity.



Figure 2.

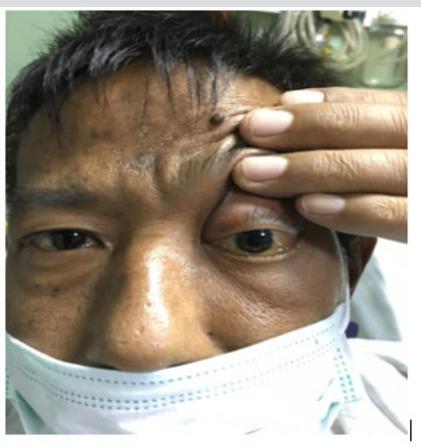


Figure 3.

His total WBC count rose to $17.8 \times 10^9/l$ (immediate post op day 1 was $7.4 \times 10^9/l$) with neutrophilia (95%). CT scan revealed ethmoid sinusitis and oedematus orbital muscle and fat (Figures 4 & 5). The possibility of cavernous sinus thrombosis due to infective aetiology was considered. Cerebral MRI /MRA/MRV was normal, thus excluding of venous sinus thrombosis (Figures 6 & 7). MRI showed proptosis, swollen orbit, opaque maxillary and ethmoid sinuses (Figures 7 & 8) The ophthalmologist agreed same antibiotics. His sinuses were very congested and oedematous with purulent exudate on nasal endoscopic examination. Antrum wash out was done and the fluid was sent for culture.



Figure 4.

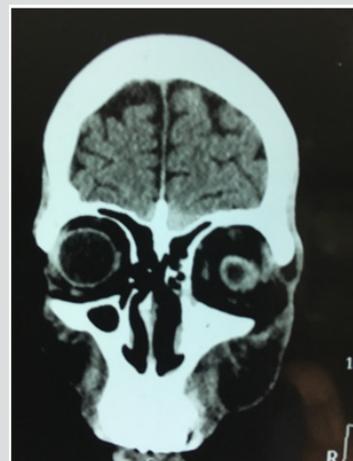


Figure 5.

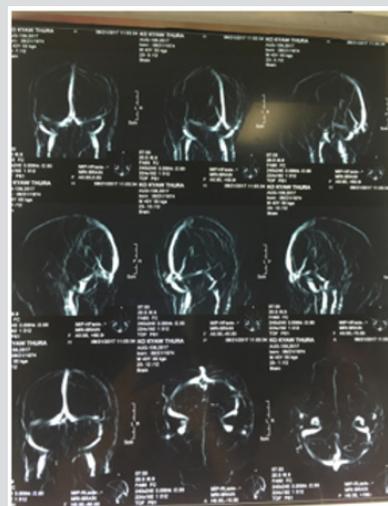


Figure 6.

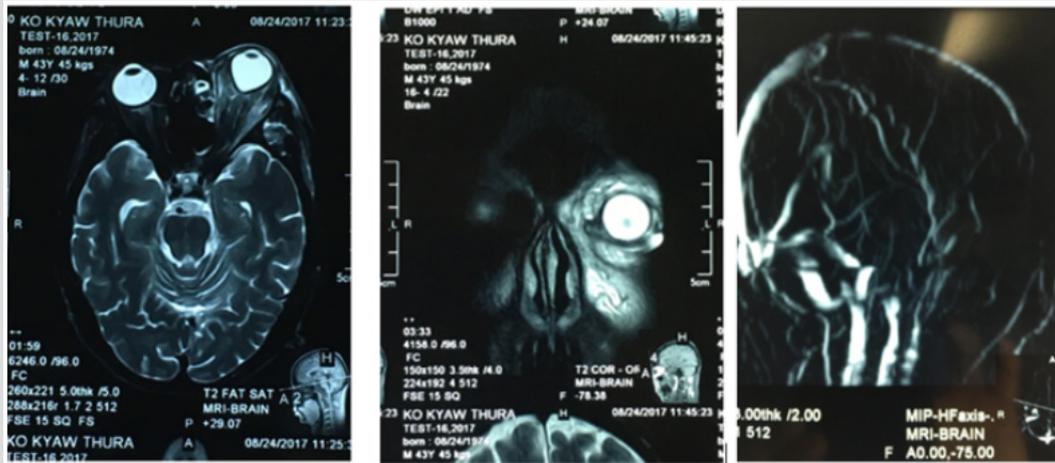


Figure 7.

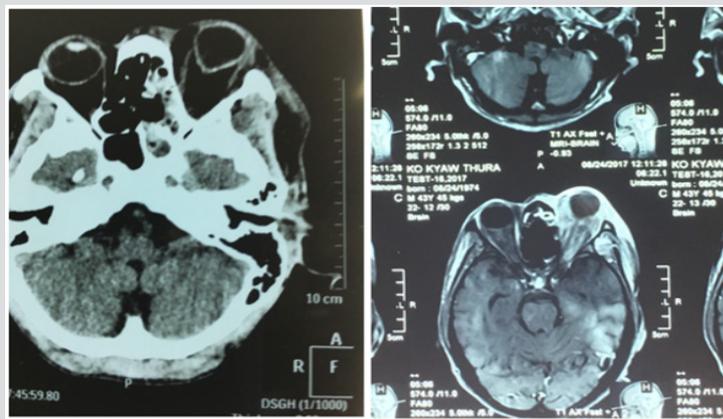


Figure 8.

His fever was swinging. The proptosis was increasing, and conjunctival oedema became worse (Figure 9) He was drowsy. There was focal skin necrosis nearby (Ecthyma gangrenosum) (Figure 10). His general condition became more deteriorated, blood pressure dropped. Blood culture was sterile. The culture from the fluid

from maxillary sinus showed growth of *Pseudomonas aeruginosa* (Figure 11) It was resistant to all antibiotics except gentamycin and amikacin. The MIC was (1) and (2) respectively. Thus, injection amikacin was added. He expired 3 weeks after receiving new kidney.



Figure 9.



Figure 10.

