Case Study

A Rare Case of Nasal myiasis following Kidney Transplantation

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How to cite this article: **Rostami Z, Nemati E, Einollahi B, Nikpoor M, Roozpeykar S, Pargar A, Javanbakht M. A Rare Case of Nasal myiasis following Kidney Transplantation. Archives of Razi Institute Journal. 2024;79(3):675-678.** DOI: 10.32592/ARI.2024.79.3.675

ABSTRACT

In this case report, we present a 63-year-old man with a history of diabetes mellitus and kidney transplantation who was diagnosed with nasal myiasis. The patient presented with symptoms of nasal myiasis infestation, including epistaxis, nasal obstruction, nasal discharge, and the presence of larvae. The patient had risk factors for poor wound healing, such as hyperglycemia, and the presence of diabetes mellitus, hypertension, and kidney transplantation indicated the presence of predisposing factors for myiasis. The myiasis was observed subsequent to the traumatic insertion of a nasogastric tube. The patient exhibited symptoms of myiasis infestation in the nasal region, including epistaxis, nasal obstruction, and nasal discharge, along with the presence of larvae. Our findings highlight the occurrence of nasal myiasis in a patient with a complex medical history, and emphasize the need for clinicians to remain vigilant for this infection. Axial CT scan showed no mucosal thickening, and T1 weighted cervical MRI showed no abnormal signal intensity, except for spondylopathy and modic changes. Diffusion Weighted-MRI (DWI) revealed no abnormal signal in the brain parenchyma. Our findings suggest the importance of clinicians being vigilant for nasal myiasis in patients with predisposing risk factors, such as diabetes mellitus and kidney transplantation. Managing nasal myiasis can be challenging, particularly in patients with multiple conditions. The management of nasal myiasis can be challenging, particularly in patients with multiple comorbidities.

Keywords: Nasal, Myiasis, Clinicians, Management

Article Info:
Received: 14 April 2024
Accepted: 3 May 2024
Published: 30 June 2024

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1. Introduction

Myiasis is an opportunistic parasitic infestation that affects both humans and animals, resulting from accidental infestation with larvae from the order Diptera [1,2]. Nasal myiasis is a rare condition caused by the invasion of fly larvae into the nasal cavity [3,4]. Predisposing factors for myiasis include psychiatric disorders, underlying diseases, atrophic rhinitis, chronic rhinosinusitis, immunocompromised conditions, sinonasal diseases, systemic diseases (such as diabetes mellitus), and poor hygiene [1,5]. The condition can be diagnosed through history and physical examination, which may reveal symptoms such as epistaxis, nasal obstruction, foul-smelling nasal discharge, facial pain, and a foreign body sensation within the nose [6]. Due to the rarity of nasal myiasis, there is no consensus regarding its management.

In this report, we present cases of nasal myiasis in patient with diabetes mellitus and hypertension who underwent kidney transplantation.

Case presentation

A 63-year-old man with history of diabetes mellitus and hypertension underwent kidney transplantation from a deceased donor and was subsequently treated with Anti-thymocyte globulin 15 mg/kg i.v. for 10 days due to delay graft function. The latter treatment was continued with prednisolone 60 mg/day (tapered gradually), cyclosporine 6 mg/kg/day orally in two doses apart (titrated based upon plasma level) and mycophenolic mofetile 1 gr twice/day. The patient was discharged from hospital three weeks after kidney transplantation, with a creatinine level of 1.7 mg/dl. During hospitalization the patient was very sleepy (drowsy) most of the time. He was asleep during all post-operative medical check-ups, although he could be woken up by calling and was cooperative. Whilst neurological examination and electroencephalogram (EEG) were normal, brain computerized tomography (CT) scan and magnetic resonance imaging (MRI) revealed senile atrophic changes and ischemic small vessels in the brain (figure 1), which is a frequent finding on CT and MRI of elderly people and is related to vascular risk factors such as chronic hypertension and diabetes mellitus treated by underling disease treatment. One week after being discharged the patient returned to hospital due to a purulent discharge from the surgical incision site. Wound secretions were submitted for microbiological culture analysis. Ultrasonography (US) detected a 50 x 70 mm collection around the transplanted kidney and an abdomino-pelvic CT scan confirmed an 88 mm abscess within the psoas muscle, which was drained under US guidance and submitted for microbiological culture analysis. The patient was then re-admitted to hospital to receive antibiotic treatment. Although no bacteria were detected at blood culture and plasma PCR was negative for cytomegalovirus, urine culture, specimen culture from the surgical wound and abscess culture confirmed Candida albicans infection, hence treatment with fluconazole, caspofungin and meropenem was immediately started. One month since treatment start, while still admitted in hospital with the surgical wound still secreting, the patient suddenly experienced intense pain from the site of the transplanted kidney and the lower limb of the same (right) side. Since hemoglobin dropped, rupture of the renal artery anastomosis was immediately suspected and the patient was promptly transferred to the operating room. After confirming the diagnosis (anastomosis rupture of the renal artery), while the creatinine was within normal limits, the transplanted kidney was surgically removed and dialysis was started again. Antibiotic and antifungal therapy were continued after nephrectomy and while his sleep was clearly disturbed, the patient complained of muscle weakness and inability to move the right lower limb. Although at medical examination passive movements of the hip could be completed without evoking pain, muscle force and joint motility range of the lower limbs of both sides were reduced, especially on the right side. Right plantar flexion movement was completely absent. Muscles force and joint mobility of the upper limbs, initially normal on both sides, gradually reduced as well. Brain and spinal MRI could not provide a clinical explanation for the patient's ailments. All imaging about force and movements of muscles and joints of the upper limbs on both sides were within normal limits. Electromyography (EMG) and nerve conduction speed (NCS) revealed severe symmetrical sensory and motor poly-neuropathic processes (mainly axonal) in both lower and upper limbs. While undergoing antibiotic therapy and maintenance dialysis, the patient developed a drug-induced thrombocytopenia, a progressive paraplegia and loss of consciousness over a period of 2 weeks. Lumbar puncture could not be performed due to thrombocytopenia. As his level of consciousness deteriorated, the patient was transferred to ICU and intubated. After the insertion of the nasogastric (NG) tube, 3-5 mm cream-colored larvae were removed from his nose, mouth, and eyes. Despite continued medical treatment the patient died 48 hours after removing the larvae. Reasons for his death was not well known but it seems due to sepsis-induced immunosuppression.

2. Discussion

In this case report, we present a case report of nasal myiasis in a 63-year-old male patient with a medical history of diabetes mellitus and kidney transplantation, who was admitted to the intensive care unit with thrombocytopenia, progressive paraplegia, and loss of consciousness. Nasal myiasis is an uncommon condition that occurs when fly larvae invade the nasal cavity [3,4]. There are several predisposing risk factors for myiasis, including psychiatric disorders, underlying diseases, atrophic rhinitis, chronic rhinosinusitis, immunocompromised conditions, sinonasal diseases, systemic diseases (such as diabetes mellitus), open wounds, debilitation, and poor hygiene [1,5]. During nasal endoscopy, an oedematous, ulcerated mucous membrane filled with necrotic tissue, and crawling larva may be visible [7]. Axial CT scan showed no mucosal thickening,

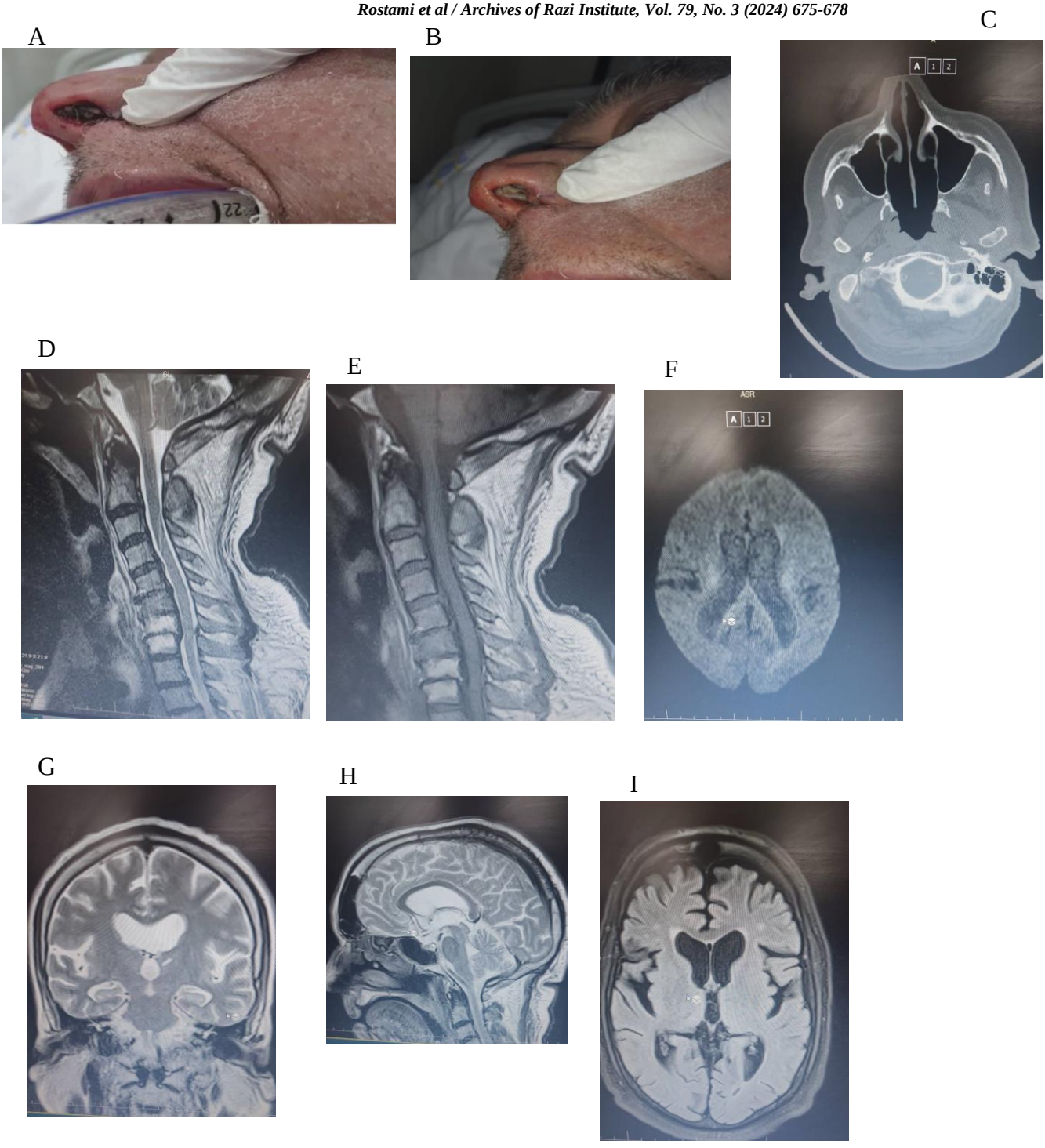

Figure 1:

- **A, B:** Nasal myiasis infestation;
- C-H: Brain magnetic resonance imaging:
  - **C**: Axial fluid attenuated inversion recovery (FLAIR)
  - **D**: Coronal T2 weighted
  - **E:** Sagittal T2 weighted
  - **F:** Diffusion Weighted-MRI (DWI), with no abnormal signal in brain parenchyma
  - **G**: Sagittal T2
  - **H:** T1 weighted cervical MRI, with no abnormal signal intensity, except spondylopathy and modic changes
- **I:** Axial CT scan, with no evidence of mucosal thickening or opacification.

and T1 weighted cervical MRI showed no abnormal signal intensity, except for spondylopathy and modic changes. DWI revealed no abnormal signal in the brain parenchyma.

3. Conclusion

In summary, our findings highlight the importance of clinicians being vigilant for nasal myiasis in patients with predisposing risk factors, such as diabetes mellitus and kidney transplantation. Managing nasal myiasis can be challenging, particularly in patients with multiple conditions.

Acknowledgment

Thanks to guidance and advice from “Clinical Research Development Unit of Baqiyatallah Hospital".

Authors' Contribution

ZR, EN, BE, MN, SR, AP and MJ contributed equally to this work, drafted and designed and also, performed radiologic analysis. All authors read and approved the final manuscript.

Ethics

The study was approved by Ethical approval for this case report was granted by the ethics committee of the Baqiyatallah University of Medical Sciences. Informed written consent was obtained from the patient and the data were used only for this case report.

Conflict of Interest

The authors declare no competing interests.

Availability of data and materials

All available data have been shared in the manuscript.

Consent for publication

Informed written consent was obtained from the patient for publication of this case report and accompanying images.

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