

A Case of Diabetes Mellitus Treated with Glucocorticoids

L. N. Rao Bondugulapati¹ Hussam Abusahmin² Peter J. T. Drew³ David K. W. Watson³
Anthony N. Dixon³

¹ Department of Endocrinology, Yas Clinic Khalifa City, Abu Dhabi, United Arab Emirates

² Department of Endocrinology, Al Qassimi Hospital, Sharjah, United Arab Emirates

³ Department of Medicine, Wrexham Maelor Hospital, Wrexham, United Kingdom

Address for correspondence L. N. Rao Bondugulapati, MBBS, FRCP, Department of Endocrinology, Yas Clinic Khalifa City, Abu Dhabi, United Arab Emirates (e-mail: simmy.omc@gmail.com).

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Clinical Resume

A 55-year-old man presented to his general practitioner (GP) with a 3-week history of flu-like symptoms, pruritis, weight loss, and diarrhea. Initial investigations showed eosinophilia, $32.2 \times 10^9/L$ (normal range: 0 to $0.5 \times 10^9/L$) and a normal random glucose.

He was seen in a general medical clinic 3 weeks after the initial referral from GP and, at this point, had polyuria and polydipsia. He was previously well and was on no medication. He is a nonsmoker, drinks alcohol occasionally, and denies illicit drug abuse. There had been no recent travel abroad. Physical examination was unremarkable.

Repeat investigations showed ongoing eosinophilia ($33.5 \times 10^9/L$), elevated random blood glucose (15.9 mmol/L), raised hemoglobin A1c (HbA1c) (89 mmol/mol, i.e., 10.3%), raised creatinine (171 $\mu\text{mol/L}$; 1.93 mg/dL), and normal liver function tests. There were no ova, cysts, or parasites in urine or stool. Strongyloides, hepatitis, and human immunodeficiency virus serology were negative, as were the antinuclear antibody and antineutrophil cytoplasmic autoantibody. A cytogenetic analysis test and F1P1L1-PDGFRA (to rule out eosinophilic leukemia) were also negative. Renal function normalized with intravenous fluid support. Acute kidney injury was thought to be secondary to diarrhea and osmotic diuresis. Computed tomography (CT) scan of the chest and abdomen showed a generally swollen and bulky pancreas (► Fig. 1).

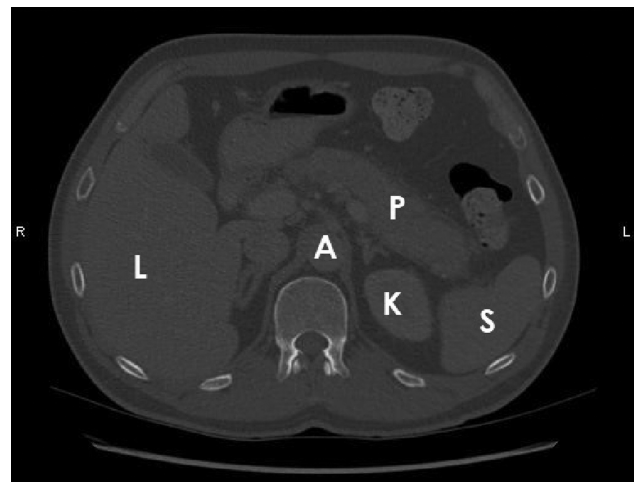


Fig. 1 Computed tomography of the abdomen, abdomen shows an enlarged pancreas.

Management and Progress

In the context of eosinophilia, elevated HbA1c, and the CT findings, the diagnosis of diabetes mellitus secondary to eosinophilic pancreatitis (EP) was thought to be the most likely etiology, and he was commenced on insulin therapy. After 1 week, prednisolone (40 mg/day) was initiated once the blood glucose levels were stabilized with insulin. Immediately after starting glucocorticoids, the eosinophil count fell (► Fig. 2), and insulin requirements decreased. After

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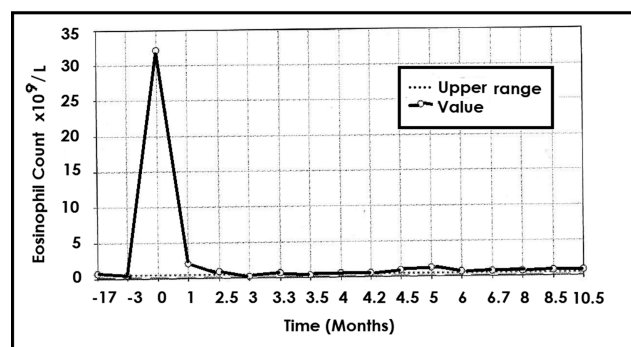


Fig. 2 A graphical representation of the rise and the sustained resolution of eosinophilia.

2 months, the eosinophilic count was near normal ($0.8 \times 10^9/L$), and insulin was stopped. Steroids were weaned off over the next 8 weeks. The patient has been off all the treatment for the last 7 years with eosinophil counts just above the normal range ($0.7 \times 10^9/L$) and the latest HbA1c, 7 years from the diagnosis, in September 2021, is 47 mmol/mol (6.4%).

Discussion

EP is a rare disorder, first described in 1978,¹ with only < 20 cases reported thus far in the literature.^{2,3} To the best of our knowledge, none of these cases presented diabetes mellitus as the cardinal symptom. Patients were predominantly male, generally in their fifth or sixth decade. Presenting symptoms were very nonspecific such as varying degrees of abdominal

pain, fatigue, nausea, vomiting, diarrhea, obstructive jaundice, and weight loss. In most reported cases, pancreatic infiltration with eosinophils was noted retrospectively either in the surgically removed specimen or during the autopsy. Differential diagnoses include pancreatic malignancy, autoimmune pancreatitis, alcoholic pancreatitis, parasitic infections, and systemic mastocytosis.

Conclusion

We presented a rare case of EP as part of hypereosinophilic syndrome with diabetes mellitus at presentation but with minimal involvement of other systems. This was a unique situation in which steroids, which usually cause hyperglycemia, were effectively used to treat diabetes mellitus.

Conflict of Interest

None declared.

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