CASE STUDIES

An unusual presentation of limited granulomatosis with polyangiitis as a periurethral tumor

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Abstract

Granulomatosis with polyangiitis (GPA), previously known as Wegner's granulomatosis, is a multisystem disease associated with anti-neutrophil cytoplasmic antibody (ANCA) with wide spectrum of clinical manifestations. It is characterized by affection of small- and medium-sized blood vessels and granulomatous inflammation. It normally affects upper and lower respiratory tract and kidneys in most of the cases.

Genital involvement in GPA is rare and is reported in < 1% of the cases. It is seen along with other systemic involvement and in patients who are already diagnosed with GPA. We present a case of a young female with limited GPA, who presented initially as an irregular mass occupying vagina and periurethral area. The diagnosis was reached on histopathology and patient showed good response only after corticosteroids and cyclophosphamide.

Keywords: Granulomatosis, polyangiitis, GPA, ANCA

Introduction

Granulomatosis with polyangiitis is an anti-neutrophil cytoplasmic antibody (ANCA)-associated multisystemic small vessel vasculitis. It is characterized by necrotizing granulomatous inflammation of upper and lower respiratory tract and involvement of kidneys.[1] GPA is an uncommon disease with annual incidence of 3-12 new cases per million and prevalence of 22-157 cases per million.[2,3]

Even though GPA is a systemic vasculitis, some patients can present with limited form mainly involving respiratory tract or periorbital area.[2] Limited urogenital tract form is observed in <1% of cases.[4,5] To the best of our knowledge, there are <5 cases reported in medical literature.[3] We report a case of GPA affecting urethra and vagina in the form of a pseudotumor in a young female. It was the first manifestation of GPA and diagnosis was made by histological demonstration of vasculitis, necrosis and granulomatous inflammation. The patient showed good response after prolonged treatment with cyclophosphamide and corticosteroids.

Case report

A 27-year-old female presented with six months history of severe dysuria, vesical tenesmus, vaginal hemorrhagic discharge and fever episodes since 4 to 5 months. She was evaluated by clinicians of urology and gynecology department and was treated with antibiotics without relief of symptoms. She also gave history of repeated headache and loss of appetite .Clinical examination revealed that she was mildly febrile and toxic. She had pallor, BP of 100/60 mm of Hg, and pulse rate of 120/min. Respiratory and cardiac systems were normal. She had lower abdominal pain, tenderness in right iliac fossa, periorbital pain and tenderness over maxillary sinuses. Her gynecological examination under anesthesia showed an irregular mass in periurethral area (Fig.1).

Laboratory tests revealed hemoglobin of 10.1 g/dl, leucocyte count of 7450/cu mm, platelet count of 377/cu mm, and ESR 56 mm in first hour, serum creatinine 0.5 mg/dl, uric acid 2.3 mg/dl, SGOT- 33.8 IU/L and SGPT was 22.2 IU/L(17 -46). Urinalysis showed 30 to 40 pus cells/hpf without hematuria or albuminuria and culture grew *Klebsiella pneumoniae*. ANA profile by immunofluorescence was negative.

Ultrasound of pelvis showed circumferential thickening of

cervix and normal wall thickness of urinary bladder. Uterus and both ovaries were normal. Computed tomography (CT) and pelvic MRI showed an irregular mass occupying urethra, vagina and cervix. In view of the diagnosis of a tumor, a biopsy was carried with several specimens obtained .The biopsy showed patchy, suppurative granulomatous inflammation with small- and medium-sized vessel vasculitis with necrotic background and without any features of caseation necrosis (Fig. 2).Granulomas did not show any Langhans giant cells or epithelial cells. There were no organisms seen and PAS stain was negative.

PET-CT showed hypermetabolic ill-defined heterogenous enhancement in periurethral and suburethral soft tissue with bulky cervix (Fig. 3). Focal increased metabolic activity along the base of left nose and adjacent anterior wall (Fig. 4) was also observed.

Based on the reports of histopathology and PET scan, ANCA test was carried out. C-ANCA was positive and P-ANCA was negative by immunofluorescence. ANCA-PR3 was 144.20 RU/ml by ELISA. Based on the clinical and lab findings, the diagnosis of limited GPA was concluded.

Discussion

Granulomatosis with polyangiitis (GPA) is an ANCA-

Fig. 1. Irregular mass in periurethral area

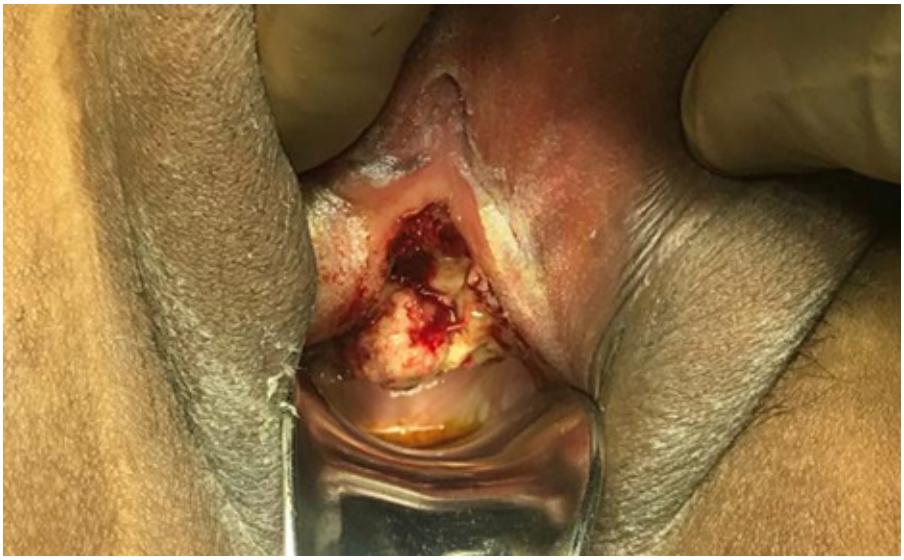


Fig. 2: Patchy, suppurative granulomatous inflammation with small- and medium-sized vessel vasculitis

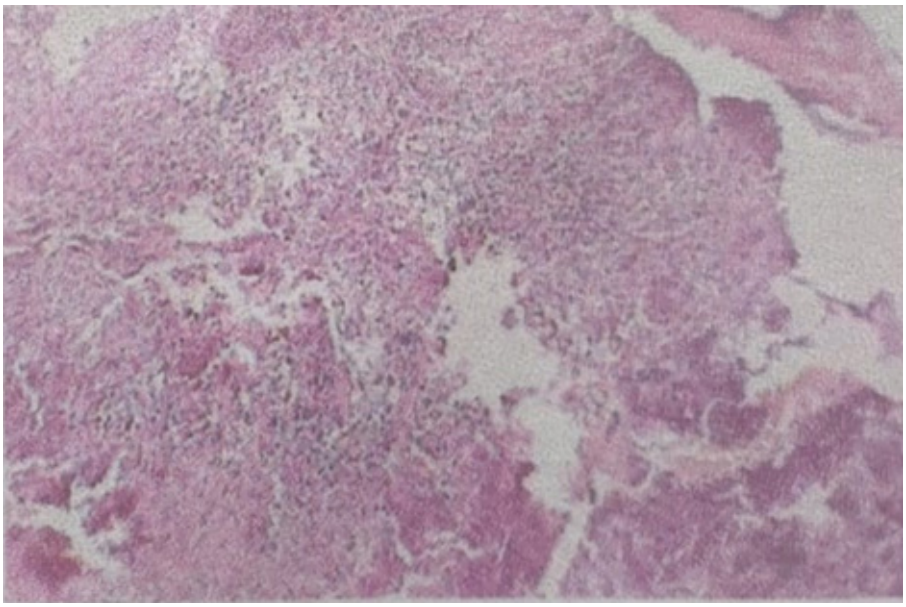


Fig. 3: PET-CT showing hypermetabolic ill defined heterogenous enhancement in periurethral and suburethral soft tissue with bulky cervix

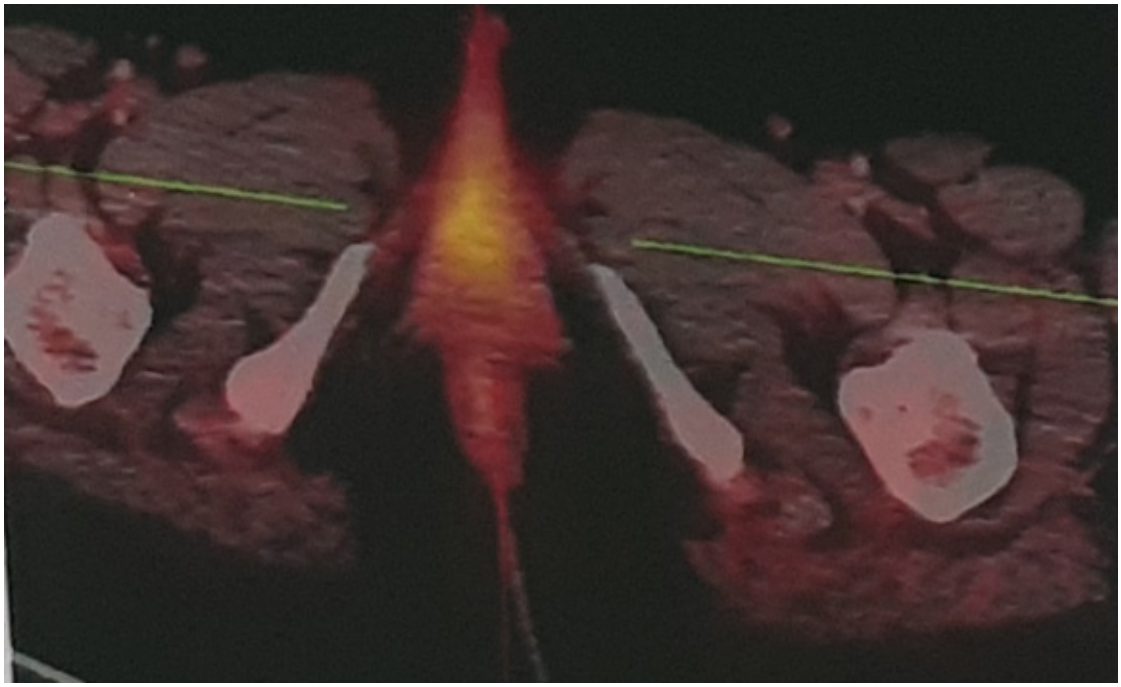
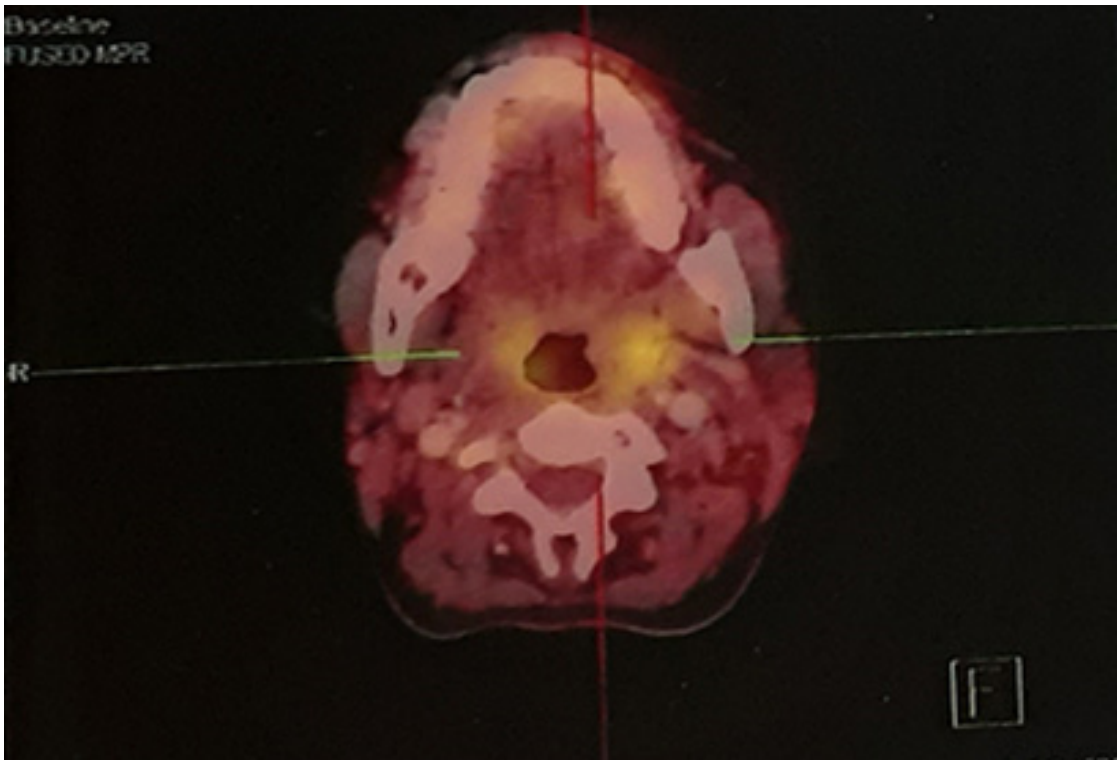


Fig. 4: Focal increased metabolic activity along the base of left nose and adjacent anterior wall



associated vasculitis characterized by necrotizing inflammation of small-sized vessels along with granuloma formation.[1] It is a rare disorder with a prevalence of 22 to 157 cases per million and usually affects Caucasians in 5th to 6th decade.[3] It involves kidneys, respiratory tract and eyes. Gynecological manifestations of GPA are rare and have been reported in <1% cases. The present patient was younger than usual patients of GPA and her first clinical manifestation was due to urogenital granulomatous mass.

Literature review shows that there are case reports and series on GPA with urogenital involvement.[4] Apart from

common features in lab diagnosis like leukocytosis, elevated platelet count, ESR and CRP, normocytic normochromic anemia are commonly observed. ANCA are present in 75% to 87.5% of patients and 90% are directed against proteinase3 (PR3). These antibodies are highly specific for GPA. The current patient was diagnosed on the basis of ANCA PR3 (proteinase 3) positivity and histopathology features. Some patients may show myeloperoxidase (MPO) positivity.[4-6]

Urogenital disease is uncommon in GPA, and the incidence is estimated to be around 12% to 18%.[5,6] Most of the patients will develop systemic manifestations during the course and very few cases have been reported on urogenital limited GPA. The current patient had predominantly urogenital mass and a small area of granulomatous tissue in sinusoidal cavity. Recurrences are observed in this pattern of presentation also. Autopsy studies of GPA with severe vasculitis have revealed the occurrence of asymptomatic involvement of urogenital system in a small percentage of cases.

To the best of our knowledge, 19 published cases of GPA presenting as urogenital mass are observed in literature.[7-11] The common features were penile necrosis, orchitis, renal masses, urethritis, and epididymitis.[3] Vagina and cervix are very rarely affected.[2]

Since there are no controlled studies on urogenital GPA, general treatment of GPA was applied for the present case and was treated initially with antibiotics. Corticosteroids 1mg /kg for the first month and IV cyclophosphamide 15 mg/kg every fortnightly for 3 infusions and subsequently three infusions were administered once in 3 weeks. The steroids were tapered gradually over 6 months and cyclophosphamide was replaced by methotrexate as maintenance therapy. She showed good response in the form of reduction of mass size and relief in pain, fever and vaginal discharge.

Conclusion

The present study describes a rare case of GPA with isolated urogenital involvement as a periurethral mass. The diagnosis was provided by the biopsy of the mass, supported by laboratory and imaging findings.

Urogenital examination is not routinely carried out in GPA. We would like to stress the importance of PET scanning and MRI to assist the diagnosis of an unusual mass. The use of immunosuppressants in the present case was helpful to avoid unnecessary surgery and prevention of morbidity.

Citation

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Conflicts of Interest

The authors declare that they have no conflict of interest.

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