Urology Case Reports 11 (2017) 53–54

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: www.elsevier.com/locate/eucr

Oncology

Pheochromocytoma: A Cause of Anemia

A. Youssef*, A. Hamade

QEQM Hospital, East Kent Hospitals University NHS Foundation Trust, Margate, UK

ARTICLE INFO

Article history:
Received 17 August 2016
Accepted 15 December 2016

Keywords:
Pheochromocytoma
Urinary bladder
Vesical
Anemia

ABSTRACT

Patients with a Pheochromocytoma usually present with intractable hypertension, postural hypotension, headaches and palpitations, with intractable hypertension being the predominant symptom. When the tumor is located in the urinary bladder, symptoms may be induced by micturition. Herein, we report a young patient with a urinary bladder Pheochromocytoma without hypertension or symptoms induced by micturition. Instead, she presented with anemia.

Introduction

Pheochromocytomas are rare Catecholamine secreting tumors, and are often found in the adrenal gland or para-aortic nerve trunk. Intractable hypertension is one of the most common symptoms. Sometimes, they are found at sites other than the adrenal gland or para-aortic ganglion. When one is located in the urinary bladder, voiding may induce the symptoms, such as palpitation and throbbing headache. Although Pheochromocytomas are generally benign, about 10% of these tumors are malignant.

Case presentation

A 57 years old female was referred by her GP for blood transfusion following incidental finding of anemia during a routine blood testing. Her only complaint was of fatigue. No gastrointestinal or genitourinary tract symptoms were noted. Esophago-gastroduodenoscopy and colonoscopy did not reveal any source of bleeding, and there was no evidence of hematuria. Ultrasonography revealed a filling defect in the bladder when she was referred to the Urologists (Fig. 1). Cystoscopy showed a small urinary bladder tumor, which was resected by transurethral resection of a bladder tumor. Her recovery was uneventful and she was discharged home.

The resected specimen consisted of approximately 6 grams of tumor fragments, which had caused the formalin fixative to turn dark brown. Haematoxylin and Eosin stained sections showed large sheets of tumor growing in the bladder wall beneath normal transitional epithelium. The tumor cells were large and polygonal with a granular cytoplasm on Haematoxylin and Eosin staining (Fig. 2). Grimelius stain showed neuro-secretory granules in the cytoplasm[1] (Fig. 3).

Immunohistochemistry staining for Chromogranin (a soluble protein consistent of secretory granules of the Chromogranin cells of the adrenal medulla) was strongly positive.[2] The diagnosis was Pheochromocytoma.

Discussion

This case presents a very unusual presentation of a vesical Pheochromocytoma, without the typical symptoms of vascular hyperactivity. The appearance of the tumor on Ultrasound scan was atypical as well, which would have made the preoperative diagnosis difficult.

According to the literature, the most common clinical presentations of vesical Pheochromocytomas were paroxysmal hypertension, headache, and hematuria. Urinary bladder Pheochromocytomas are immensely rare tumors, they account for 0.05% of all urinary bladder tumors and less than 1% of all Pheochromocytomas. In the urinary tract, the urinary bladder is the most common site of Pheochromocytomas (79.2%), followed by the urethra (12.7%), pelvis (4.9%), and ureter (3.2%).[2,3]

Extra-adrenal Pheochromocytomas are malignant in approximately 10% of cases and it is difficult to exclude malignancy on the basis of clinical presentation. Clinical grounds for malignancy may only include metastasis to local lymph nodes and distant metastasis. Therefore, histological examination of the resected specimen is essential to rule out microscopic features of malignancy such as tumor cell necrosis and vascular invasion, absence of hyaline globes within the tumor cells, mitotic figures and cytological anomalies.[4]

In retrospect the patient in this case was re-assessed and she denied any symptoms of paroxysmal hypertension during

* Corresponding author.
E-mail address: adhamyoussef@doctors.org.uk (A. Youssef).

http://dx.doi.org/10.1016/j.eucr.2016.12.005

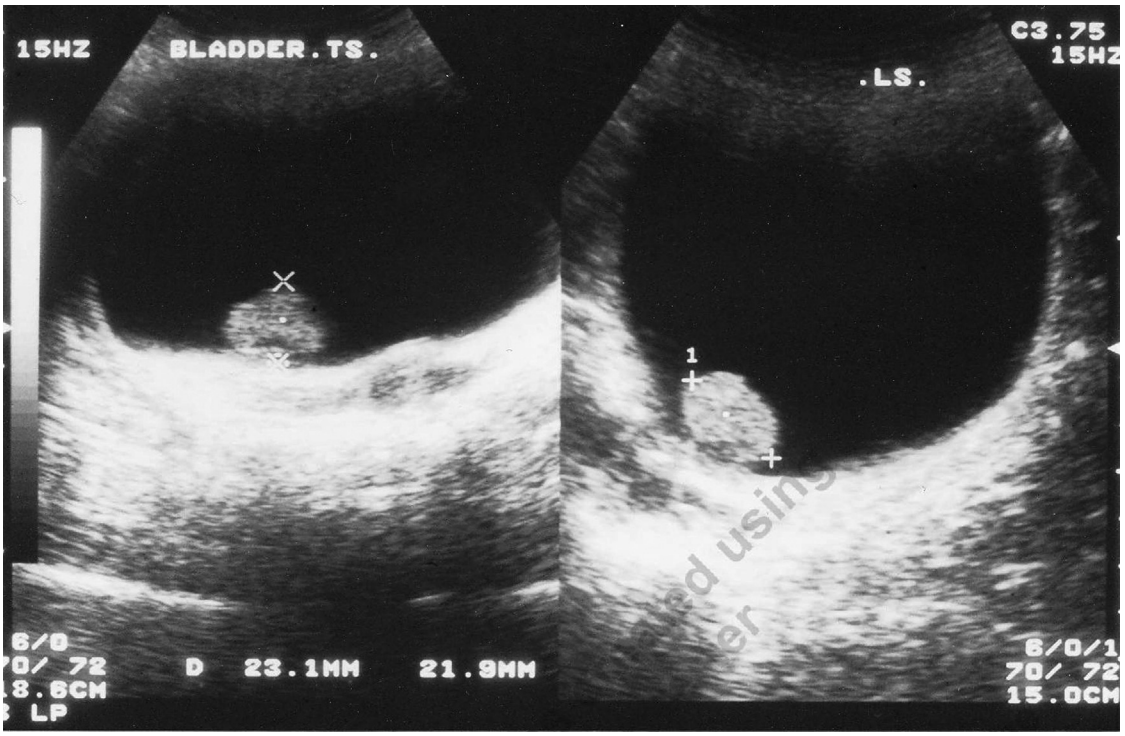

Figure 1. Ultrasound picture showing the filling defect in the bladder.

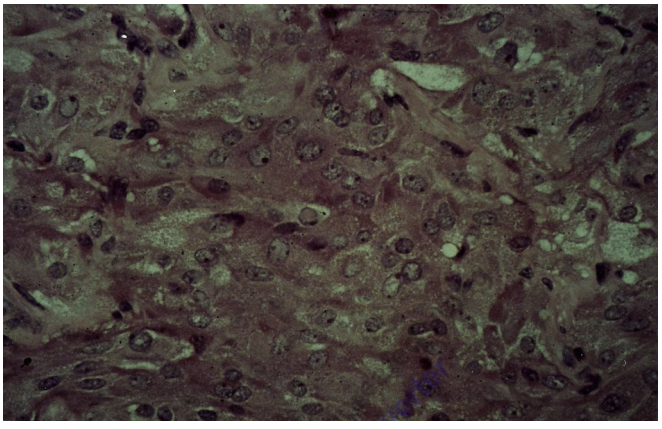

Figure 2. Photomicrograph of the urinary bladder tumor following Haematoxylin and Eosin stain ×40 magnification, showing the large polygonal cells with granular cytoplasm.

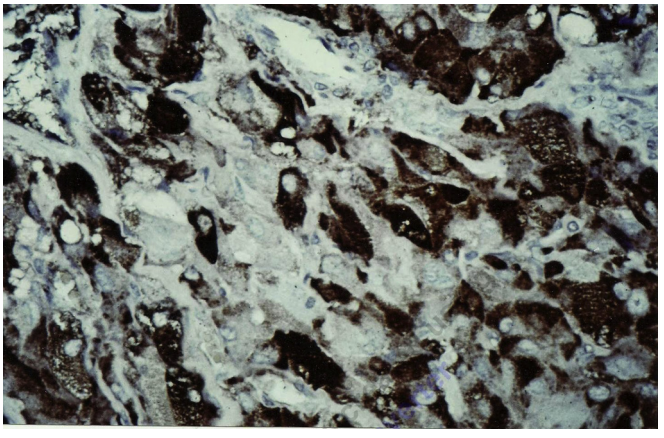

Figure 3. Photomicrograph of the urinary bladder tumor following Grimelius stain ×40 magnification, showing the fine neuro-secretory granules in the cytoplasm, which stain black.

micturition or straining. Abdominal CT scan was normal as was Vinyl Mandelic Acid (VMA), Dopamine, Adrenaline and Noradrenaline in 24-hour urine specimen.

She was reviewed regularly in outpatient department and 6 months later there was no recurrence of the tumor or anemia.

Conclusion

In this case which we are reporting, a Pheochromocytoma was found in the urinary bladder of a young lady who presented only with symptoms of anemia of unknown cause and this was cured by simple resection of this rare tumor.

We should remember that anemia, which is a well-known medical problem needs joint care from different specialties to find its cause and that urological disorders could be one of them.

Consent

The patient has given informed consent to publish this case report.

Conflict of interest

There is no conflict of interest to disclose.

References

1. Kato H, Suzuki M, Mukai M, Aizawa S. Clinicopathological study of pheochromocytoma of the urinary bladder: immunohistochemical, flow cytometric and ultrastructural findings with review of the literature. *Pathol Int*. 1999;49(12):1093–1099.
2. Katiyar R, Dwivedi S, Trivedi S, et al. Non-functional paraganglioma of the urinary bladder treated by transurethral resection: report of two cases. *J Clin Diagn Res JCDR*. 2016;10(2):Xd01–xd3.
3. Das S, Lowe P. Malignant pheochromocytoma of the bladder. *J Urol*. 1980;123(2):282–284.
4. Segawa N, Osafune T. Malignant pheochromocytoma of the urinary bladder. *Hinyokika kiyo Acta urologica Japonica*. 2005;51(4):291–296.