Case Report

Virchow's node – an unheard site of metastatic bladder cancer

L. N. Seneviratne, J. M. N. R. K. Jayasundare and N. D. Perera

Department of Urology, National Hospital of Sri Lanka, Colombo, Sri Lanka.

Abstract

Metastatic carcinoma of the bladder presenting with enlarged left supraclavicular lymphadenopathy is not reported in literature published in English language. All three cases presented with a Virchow's node with computer tomography confirming solid bladder tumour. Histology proved muscle invasive high grade transitional cell carcinoma (TCC) with one with neuroendocrine differentiation and another with squamous metaplasia. The article reviews diagnosis and management of three cases of metastatic bladder cancer presenting with left supraclavicular lymph node deposits.

Introduction

Virchow's node (or "signal" node) is an enlarged, hard, left supraclavicular lymph node which contain metastasis of a range of thoracic or abdominal visceral malignancy. It was initially named after Rudolf Virchow (1821-1902), the German pathologist. The presence of an enlarged Virchow's node is also referred to as Troisier's sign, named after Charles Emile Troisier, who also described this later.

Case 1

56-year old heavy smoker with a history of transurethral resection of a bladder tumour (TURBT) for muscle invasive (T2) tumour one year back who defaulted further treatment, presented with gross haematuria. Computerized tomography scan showed a large, well-enhanced, broad-based tumor causing thickening of the left bladder wall and diffuse enlargement of the pelvic and para aortic lymph nodes and bilateral inguinal lymphadenopathy (Figure 1). Subsequently he underwent palliative TURBT and a tru-cut biopsy of the Virchow's node. Histology showed high grade muscle invasive transitional cell carcinoma (TCC). Pan-endoscopy of the gastrointestinal tract (GIT) and bronchoscopy were normal. He was followed up with systemic chemotherapy (M-VAC) treatment by the oncologist.

Figure 1. CT Scan of the pelvis coronal section – large muscle invasive tumour almost completely occupying the bladder but sparing the rectum (T – tumour, R – Rectum).

Case 2

A 58-year old man, who was a non-smoker presented with intermittent gross painless haematuria and a Virchow's node of a few weeks duration (Figure 2). X-ray KUB revealed a large bladder calculus while computerized tomography scan showed a large, well-enhanced, broad-based tumour causing thickening of the left bladder wall along with intraureteric extension with unilateral hydronephrosis. TURBT and FNAC of the Virchow's node confirmed high grade TCC with squamous metaplasia. He underwent percutaneous nephrostomy (PCN) to relieve the left obstructed kidney as well as a palliative cystectomy since he was exanguinating from the bladder.

Case 3

A 61-year old man, who underwent TURBT for high grade superficial bladder tumour, presented with a large Virchow's node after two months. Subsequent histology confirmed high grade TCC with neuroendocrine differentiation. It was characteristically composed of

sheets and nests of small round cells containing hyperchromatic nuclei. Immunostaining for neuroendocrine markers were positive (Figure 3). He was referred to the oncologist for systemic chemotherapy.

Figure 2. Left supraclavicular lymph node enlargement.

Figure 3. Histology of a muscle invasive carcinoma of the bladder with neuroendocrine cells (H & E $\times 100$).

Discussion

Troisier's sign with Virchow's node is an oncologically ominous clinical entity. The majority of such nodes (64%) are due to primary malignancies of lung (22% cases), breast (16.4% cases), cervix (11% cases) stomach (10%) and oesophagus (8.6% cases). In 13.3% cases the primary site was unknown [1]. There are no reported antemortum studies of bladder tumour deposits in the supraclavicular nodes.

Common sites of metastatic spread of bladder carcinoma are regional lymph nodes (90%), liver (47%), lung (45%), bone (32%), peritoneum (19%), pleura (16%), kidney (14%), adrenal gland (14%), and the intestine (13%) [2]. Histological type has not shown

any predilection towards lymphatic metastases as shown in the present series of case studies.

The incidence of pelvic nodal metastases in patients undergoing radical cystectomy varies from 15% to 25% and is related to the depth of invasion and tumour. In a large autopsy study (Smith et al) of 662 cancer of the urinary bladder with lymph node involvement showed a differential lymph node metastasis in obturator 74%, external iliac 65%, hypogastric 17%, perivesical 16%, common iliac 19%. In addition three other studies showed that celiac (2/91), portal (2/91) and mesenteric (4/91), mediastinal (23%) and tracheobronchial (7%) nodal involvement. Yet the incidence of Virchow's node was not mentioned either in this study or other similar studies.

High grade TCC has a poor outcome. Presence of squamous metaplasia or neuroendocrine differentiation makes tumour more aggressive resulting in poorer prognosis (3,4).

Presence of Virchow's node with muscle invasive bladder tumour is considered as incurable metastatic disease as the pathological retrograde tumour cell deposition against the normal drainage of the node (towards the thoracic duct) imply extensive tumour occupation of the retro peritoneum.

In a multi-institutional review of 64 patients, a multi-variate analysis has indicated that neither chemotherapy, nor radiation, nor surgery has any impact on overall survival. The poor prognosis of patients treated by radical cystoprostatectomy alone reported by Sved et al. supports the use of combination modality treatments (3). Significant progress has been made in the systemic chemotherapy with the 4-drug regimen consisting of methotrexate, vinblastine, adriamycin and cisplatin (MVAC) which has been the standard treatment regimen for approximately 10 years. Response rates have ranged up to 60%. The benefits of MVAC appeared to have plateaued, and many patients with advanced disease are not candidates for therapy as a result of preexisting cardiac and renal disease (because of contraindicated use of adriamycin and cisplatin, respectively).

This regimen has been challenged with newer drug combination which includes taxanes and gemcitabine to the administration of cisplatin and etoposide (4). In cases of contraindication for cisplatin, administration of cyclophosphamide, doxorubicin and etoposide is an option (5).

However, many of the patients have significant comorbidity and are unfit for systemic chemotherapy by the time Virchow's node is apparent which leaves them with terminal care.

References

1. Gupta N, Rajwanshi A, Srinivasan R, Nijhawan R. Pathology of supraclavicular lymphadenopathy in Chandigarh, north India: An audit of 200 cases diagnosed by needle aspiration. *Cytopathology* 2006 Apr; 17(2): 94-6.
2. Wallmeroth A et al. Patterns of metastasis in muscle-invasive bladder cancer (pT2-4): An autopsy study on 367 patients. *Urology International* 1999; 62: 61-5.
3. Sved P, Gomez P, Manoharan M, Civantos F, Soloway MS. Small cell carcinoma of the bladder. *British Journal of Urology International* 2004; 94: 12-7.
4. Treiber U, Hartung R, Breul J. Paclitaxel and carboplatin weekly in advanced urothelial cancer. Program and abstracts from the American Urological Association 95th Annual Meeting; April 29 - May 4, 2000; Atlanta, Georgia; Abstract 1047.
5. Klein EW, Lamm DL, Hogan T, Nseyo UO, Kandzari SJ. Cisplatin, gemcitabine and paclitaxel (CGP) chemotherapy of advanced bladder cancer. Program and abstracts from the American Urological Association 95th Annual Meeting; April 29 - May 4, 2000; Atlanta, Georgia; Abstract 1049.

Authors

L. Niroshan Seneviratne, MS (Col), MRCS (Eng)*

J. M. N. R. K. Jayasundare, MS (Col)*

*Senior Registrar in Urology

Neville D. Perera, MS (Col), FRCS (Eng), FRCS (Edin), DUrol (Lond)
Consultant Urological Surgeon

Department of Urology, National Hospital of Sri Lanka, Colombo, Sri Lanka.