

Case Study

GANGRENE PRECIPITATED BY CISPLATIN BASED CONCURRENT CHEMORADIATION IN CANCER CERVIX

SUNIL C*, DEEPAK K

Department of Radiotherapy and Radiation Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi
Email: drsunil104@gmail.com

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ABSTRACT

Gangrene of hand leading to its amputation may be the worst after-effects of cisplatin. Here we report the case of cisplatin-induced gangrene in a patient of the cancer cervix who was treated with concurrent chemo radiation.

Keywords: Cancer cervix, Cisplatin, Gangrene.

INTRODUCTION

The standard of care for carcinoma cervix FIGO IB-IVA is concurrent chemoradiation. The usual practice, globally, is to give Inj. Cisplatin at 40 mg/m² weekly while the patients are on external beam radiation. Cisplatin is known to cause nausea, vomiting and peripheral neurotoxicity. Here we present a very unusual case of cisplatin induced gangrene in the upper limb of a patient of the carcinoma cervix who was treated with the standard chemo-radiation as mentioned above.

CASE REPORT

A 45-year-old lady presented with complaints of bleeding and discharges per vaginum for few months. On clinical examination, she was found to have a bulky ulcero-proliferative growth involving both the lips of cervix and upper two-third of the vagina. The right parametrium was free while the left parametrium was involved up to the lateral pelvic wall. A punch biopsy was done, and histopathology report was non-keratinizing squamous cell carcinoma. Routine laboratory, chest X-ray and CECT whole abdomen were done. The final diagnosis was squamous cell carcinoma from the cervix which was FIGO IIIB.

She was treated on Tele-cobalt unit with two parallel opposed antero-posterior fields to a dose of 46Gy in 23 fractions from 01/12/2014 until 31/12/2014. She was given Inj. Cisplatin (40 mg/m²) weekly concurrently with radiotherapy. Subsequent to external beam radiotherapy she was treated with low dose rate brachytherapy to a dose of 29Gy in 22 hrs to point A. At the end of the treatment, she did not have any residual disease on clinical evaluation. Just after 10 days of completion of her treatment she started developing blackening of her left hand, which progressed very rapidly. On clinical examination, she had intense black skin involving her left hand until her wrist. The implicated area was dry, non-tender and had absent sensation to touch. There was no discharge or any signs of inflammation in the concerned area (fig. 1). Ulnar and brachial pulses were present. The radial pulses were absent, and her hand was cold and edematous. She could move her fingers to a small extent. Color Doppler of upper limbs, revealed that her arterial walls were thickened, which was suggestive of atherosclerosis. 2D echocardiography was normal. Platelet count, D-Dimer, bleeding time, clotting time, PT and INR was within the normal range. CT angiography of the left upper limb showed that the left subclavian & axillary arteries, brachial artery, bifurcation of the brachial artery, radial and ulnar arteries were normal. Superficial and deep palmar arches of the left hand showed faint opacification with multiple small collateral channels arising from distal radial & ulnar arteries (fig. 2).

She underwent below-elbow amputation by an orthopedic surgeon in Sir Sunder Lal Hospital, Banaras Hindu University.

Necessary permission for reporting her information was taken from the patient.

DISCUSSION

The index patient developed dry gangrene of her left hand just after her treatment with radiotherapy with concurrent cisplatin. She did not have coagulopathy or any cardiac disease. CT angiography showed signs of vasculitis in the distal arteries. In all probabilities, it was cisplatin, which was the culprit.

The exact mechanism of vascular damage by cisplatin is still not well known. The likely mechanisms by which cisplatin induces vascular events are endothelial dysfunction, vasospasm, and autonomic dysfunction [1].

Vogelzang *et al.* reported the incidence of Raynaud's phenomenon in 21% of patients with testicular cancer treated with Vinblastine and Bleomycin, and in 38% of patients receiving a similar regimen incorporating cisplatin [2]. Our patient did not have symptoms and signs of Raynaud's phenomenon. Cisplatin is a known causative agent for ischemic vascular complications involving major arteries usually in patients with the high risk factor for atherosclerosis [3].

There are few case reports, which suggest that cisplatin based chemotherapies were responsible for myocardial infarction in the absence of any risk factor for atherosclerosis [4]. Our patient was young, thin built and had no history of smoking.

Hypomagnesemia, a side-effect of cisplatin, is known to potentiate arterial spasm. Autonomic dysfunction with regards to increased alpha-adrenergic tone has been reported with cisplatin [5]. This seems the unlikely cause in our patient as all of our patients routinely receive a magnesium supplement through intra venous route.

In our case, hypoperfusion which could have been due to arterial vasospasm or thrombosis probably resulted in dry gangrene of the upper limb.



Fig. 1: Photograph of the patient with gangrene



Fig. 2: CT angiography of the upper limb

CONCLUSION

Documentation and reporting of these events is important to develop guidelines for risk assessment of vascular damage whenever cisplatin is planned for treatment. In conditions where carboplatin is equally efficacious to Cisplatin, one can decide to consider the former to reduce the risk of such catastrophic events.

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CONFLICTS OF INTERESTS

All the authors have none to declare.

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