



Case Study: Magnetic Resonance Imaging of Squamous Cell Carcinoma of Perianal Region, Vulva and Cervix

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Authors' contributions

This work was carried out in collaboration between all authors. Author PY has analysed the case by CT and MRI with the assistance and useful support of authors AR and KM and given the diagnosis. Author PY studied literature and prepared the case study. Author VMK head of the department of radio diagnosis encouraged the authors to proceed with the case workup. All authors read and approved the final manuscript.

Case Study

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ABSTRACT

Squamous cell carcinoma is the second most common skin carcinoma, which most commonly affects sun-exposed areas. However squamous cell carcinoma can rarely involve the anal and perianal region. It has been found in association with human papilloma virus infection, uterine cervix dysplastic changes and high-grade anal intra-epithelial neoplasia (AIN). We report a case of extensive carcinoma of the perianal region, vulva and cervix. A 49 years old female came with complaint of swelling in the right inguinal region since one year, pain and swelling in the gluteal region since 7-8 months. Contrast enhanced CT scan and MRI were done which showed a mass involving the perianal region, vulva and cervix with a large inguinal lymph node. Biopsy revealed squamous cell carcinoma.

Keywords: *Squamous cell carcinoma; anal carcinoma; perianal carcinoma; cervical carcinoma; perineal carcinoma.*

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1. INTRODUCTION

Squamous cell carcinoma of perianal region is an uncommon malignancy, it accounts for approximately 1% of all gastrointestinal neoplasm and less than 5% of ano-rectal tumours [1]. It is usually associated with human immunodeficiency virus (HIV) positive patients, human papilloma virus infection and chronic inflammatory bowel disease.

2. Case Report

A 49 years old female came with complaint of swelling in right inguinal region since 1 year which gradually increased in size and swelling and pain in the gluteal region since 7-8 months. No history of weight loss or loss of appetite. Patient was non-smoker and not HIV positive. On examination there was an irregular swelling seen involving the skin over perianal region and vulva. There were palpable right inguinal lymph nodes, which were mildly tender and firm on examination. Contrast enhanced CT scan was done, which showed a well-defined irregular hypodense lesion involving the anal, perianal region and vulva (Figs. 1 a-d). There is an ill-defined hypodensity seen involving the cervix (Fig. 1b.) There were multiple pelvic and bilateral inguinal lymph nodes seen (Figs. 1a and c).

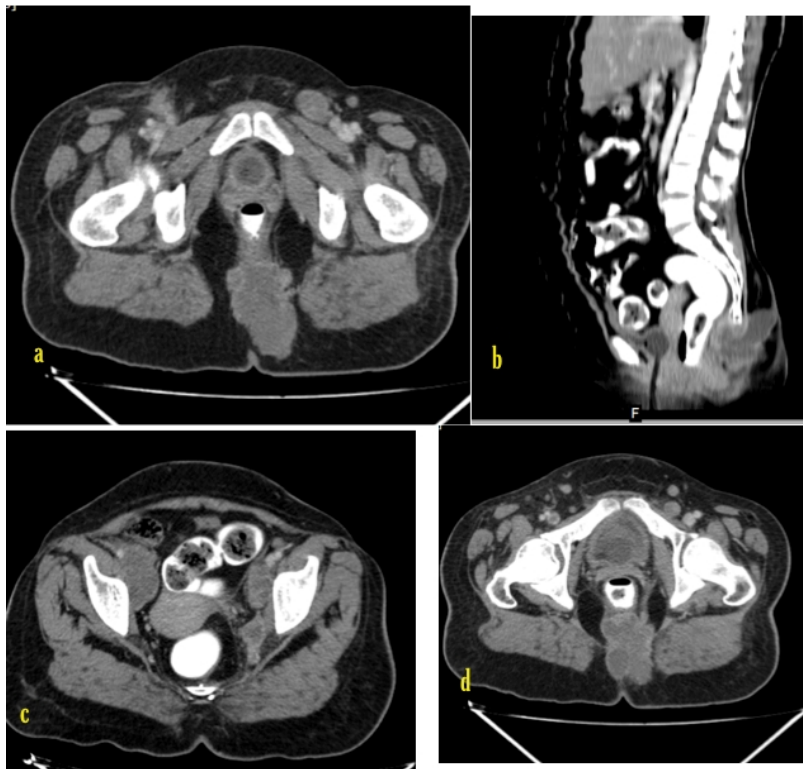


Fig. 1. Contrast enhanced CT scan axial image (a &d) shows an irregular lobulated hypo-dense lesion involving the perianal region and posterior aspect of anal canal. (b) Sagittal image show hypo-dense lobulated lesion in skin and subcutaneous tissue of perianal region. (c) Show heterogeneous density of cervix and lower uterine segment. Multiple lymph nodes are seen in the pelvis

MRI was done for further evaluation, which showed a large irregular complex mass with solid and cystic components involving the perianal region and vulva. This mass was extending up to the posterior wall of the anal canal (Figs. 2a and b). It was predominantly hyper-intense on STIR/ T2WI (Figs. 2 a-d) and hypo-intense on T1WI (Fig. 3a). There was an ill-defined heterogeneous lesion seen involving the cervix and uterus, which showed heterogeneous post contrast enhancement (Figs. 3b and c). There was a large lymph node seen in right inguinal region (Fig. 2d). There were multiple bilateral internal iliac, external iliac and inguinal lymph nodes seen (Fig. 2 c and d). On post gadolinium study there was intense peripheral enhancement seen in the lesion and of lymph nodes were seen (Figs. 3 b-d). Biopsy of the right inguinal lymph node showed metastasis from squamous cell carcinoma. Later biopsy of the mass lesion was done which turned out as squamous cell carcinoma (Fig. 4). TNM Staging of the tumour was T4 N3 M0. Chemotherapy with 5-fluorouracil (5-FU) and Mitomycin was given combined with radiotherapy. Follow up examination of the patient after three months showed mild regression of the mass and mild clinical improvement. Patient didn't finish the treatment. Patient was shifted to specialized tertiary care hospital of oncology in another city for treatment and did not turn up again for follow up. MRI was done before the therapy and then one was done after one cycle of chemotherapy.

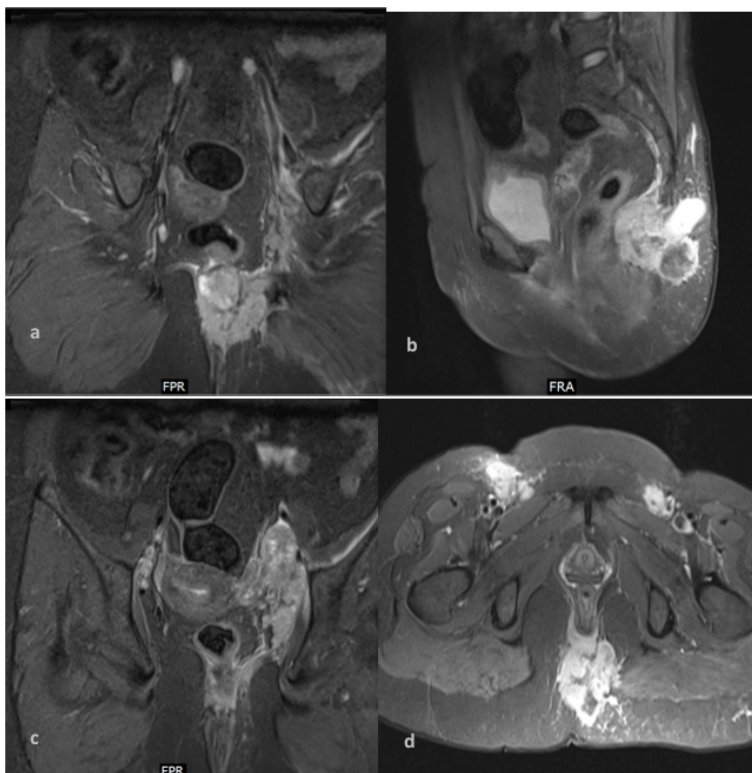


Fig. 2. STIR MRI Coronal, sagittal and axial images of the 49 years female show a irregular, lobulated mass seen involving the skin and subcutaneous tissue of perianal region, anal canal, vulva and cervix. This lesion is hyper-intense with cystic component in its superior aspect and heterogeneous signal intensity in its inferior aspect. Multiple pelvic and inguinal lymph nodes are also seen

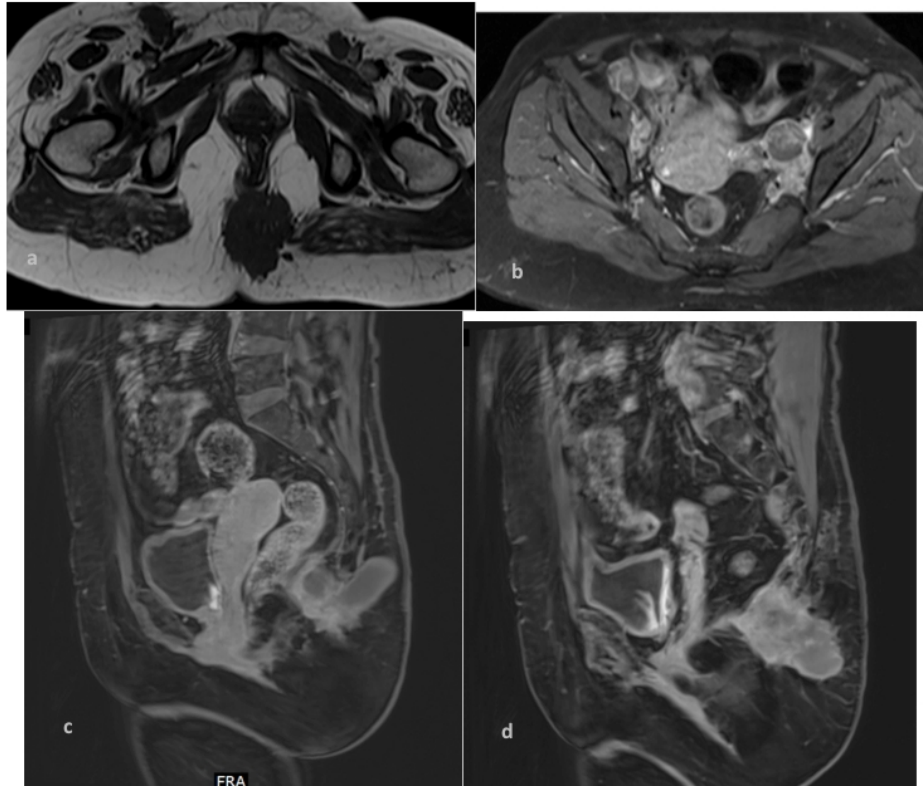


Fig. 3. Axial T1WI (3a) shows hypo-intense mass of perianal region. Post gadolinium enhanced MRI images (b-d) show intense peripheral enhancement of the perianal mass lesion. Few non-enhancing necrotic areas were also seen within it. Heterogeneous post contrast enhancement of vagina, cervix and uterus was also seen. Intervening plane between bladder and cervix is obscured. Peripheral enhancements of bilateral inguinal and pelvic lymphnodes (b)

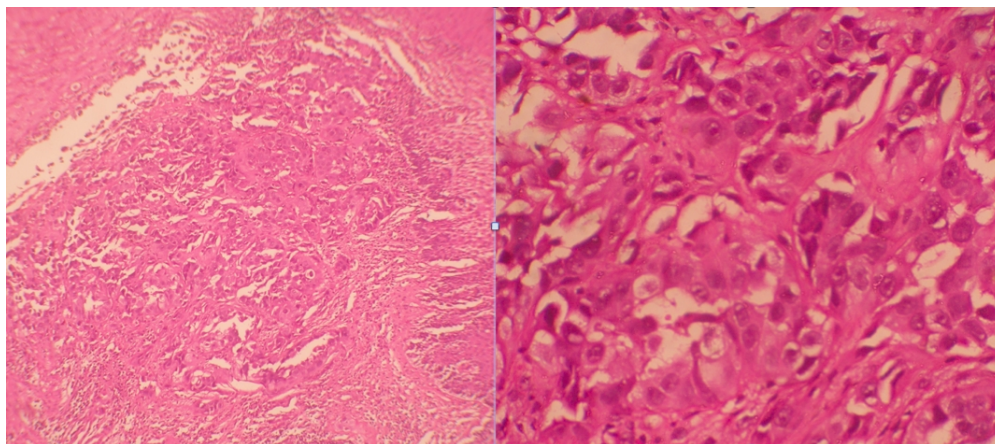


Fig. 4. Histopathology of the perianal region showed squamous cell carcinoma Hematoxylin/eosin slide showing atypical tumour cell with reduced stroma

3. DISCUSSION

Anal squamous cell carcinoma is a very uncommon malignancy, accounts for only 1 % of all neoplasms and less than 5% of ano-rectal tumors [1]. In past decade, it was commonly found in advanced age patients with female predominance but recently it is found even in 40–60 years of age group [2,3]. It has been found in association with human papilloma virus infection, uterine cervix dysplastic changes, high-grade pre-malignant and an intraepithelial neoplasm (AIN). Its incidence has been increasing in patients with HIV infection, inflammatory bowel disease and cigarette smoking. Anal Intraepithelial neoplasia is a precursor lesion to invasive squamous cell carcinoma like cervical intraepithelial carcinoma is a precursor lesion to invasive carcinoma of the cervix. HPV is an important factor in the pathogenesis of these lesions [4]. Certain types of HPV are responsible for the ano-genital squamous cell carcinoma [5]. HPV type 16 is most often associated with ano-genital carcinoma [4].

Anal carcinoma in women contained hrHPV more commonly (90%) than in men (63%) [6]. Overall, 50% patients with anal and perianal skin cancer cases were seropositive for HPV 16, 18, 33 [7]. Clinical features of anal carcinoma are usually a mass associated with pain and bleeding, bleeding can be interpreted as hemorrhoids and diagnosis is delayed [8].

Ultrasonography is the initial investigation, however it has some limitation. Magnetic resonance imaging has a very important role in diagnosis, to see the extent of the lesion and for staging of the disease; that helps in the treatment and follow up of the patient. MRI is significantly superior to sonography and CT in the evaluation of both tumor evaluation and its extension into the adjacent organs.

Treatment: Small tumours of anal canal (<2cm) can be excised but majority of patients present with large lesion. Nigro has done study of chemotherapy and radiotherapy in 3 patients and confirmed that squamous cell carcinoma of anal canal is a radio-sensitive tumour and with combination of chemo-radiotherapy most anal carcinoma can be cured [9]. Chemo-radiotherapy give good results, with approximately 30% of patients will develop local recurrence [10].

4. CONCLUSION

Squamous cell carcinoma is an uncommon malignancy of perineal region. Correct diagnosis and extent of the disease is necessary for the treatment planning. Magnetic resonance imaging has a very important role in diagnosis, extent of the lesion and for staging of the disease.

CONSENT

Authors declare that 'written informed consent was obtained from the patient for publication of this case report and accompanying images.

ETHICAL APPROVAL

Approval from the ethical committee of the hospital was obtained.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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