Case Report

# Dhoti cancer revisited

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## Abstract

Dhoti is traditional Indian dresses worn by males in the Indian subcontinent to cover the lower parts of the body. The term Dhoti cancer was first used by Khanolkar and Suryabhai in 1945. It is a type of waistline SCC reported in Indian males wearing dhoti. Only a handful of cases are reported in English literature. This case is remarkable due to its rare site of presentation, simultaneous presence of carcinoma and suspicious acanthosis on both side of waist in the same patient. Any hypo pigmented patch and acanthosis on the waist area in a dhoti clad man should be viewed with suspicion and continuous surveillance is needed thereof.

**Keywords:** Acanthosis, dhoti cancer, squamous cell cancer, waistline cancer, wide local excision

## Introduction

Basal cell carcinoma is the most common cutaneous malignancy.[1] Squamous cell carcinoma (SCC) ranks second after BCC.[1] In India, skin cancers constitute less than 1% of all cancers.[2] Saree and dhoti [Figure 1] are traditional Indian dresses worn by females and males, respectively, to cover the lower parts of the body. These are particularly used as daily costumes in the Indian subcontinent due to comfort and low cost of cotton fabric. The term *Dhoti cancer* was first used by Khanolkar and Suryabhai in 1945.[3] It is a type of waistline SCC reported in Indian males wearing *dhoti*.[2] It can be considered a variant of scar cancer as described by Marjolin.[4] Only a handful of cases are reported in the English literature, and the knowledge of its existence is even rare in Indian medical fraternity.[5] We describe an interesting case of waistline SCC in an elderly male with coexistent malignant and precancerous lesion in the same patient.

## Case Presentation

A 68-year-old male patient presented to us with painless, itchy, gradually progressive, pigmented ulcer on the left waist since the last 1 year. It was associated with bothersome serious discharge since the last 2 months. For the above complaints, he consulted a local physician where an incisional biopsy was done. This revealed squamous cell carcinoma of the left-sided waist ulcer. He was further referred to us for definitive management.

On thoughtful questioning, it was revealed to us that a coarse, hypopigmented lesion is present on the right waist since the last 8 years. According to the patient, this lesion had a similar appearance to the one on the left waist few years back. Patient was worried about the possible transformation to cancer on the right side waist lesion also.

Patient gave a history of wearing tight *dhoti* since the last 50 years.

On local examination, the left waist showed a nontender, hypopigmented skin area along with ulceroproliferative growth of 7 × 5 cm size with irregular surface and everted margins. There was small patch of hyperpigmented skin surrounding the above lesion [Figure 2].

The right waist revealed a 6 × 5-cm sized nontender, coarse, scaly hypopigmented lesion [Figure 3]. There was no inguinal lymphadenopathy on the bilateral groin. Rest of the systemic

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examination was essentially normal. Contrast-enhanced computed tomography (CECT) scan showed 5 × 2 cm ulcerated growth involving the abdominal wall with no involvement of the underlying muscles and bones [Figure 4].

Based on the earlier findings, wide local excision of the ulcer of the left waist with a margin of 2 cm was done under general anesthesia [Figure 5]. Simultaneously, incisional biopsy of the right waist lesion was taken. The post-excision soft tissue defect was resurfaced with split thickness skin graft harvested from the left thigh.

Histopathology of the excised specimen reported well-differentiated squamous cell carcinoma with all margins free of tumor. The depth of the tumor was 6 mm with no lymphovascular or perineural invasion seen [Figure 6]. Biopsy report from the right waistline lesion revealed hyperkeratosis with parakeratosis along with moderate acanthosis of the keratotic layer of skin. There was however no evidence of malignancy in the biopsy specimen.

Postoperatively wound healed normally without any complications [Figure 7]. The patient was followed-up at 2 monthly intervals for 8 months now with no evidence of locoregional tumor recurrence on the left side [Figure 8].

## Discussion

Dhoti is worn in a typical fashion with the knot tightly placed on waist with one of the shorter ends goes below the groin and tucked at the back [Figure 1].[2] The tight knot at a constant position daily along with the perspiration that is so classic of the Indian subcontinent produces dermatoses.[6] These dermatoses may be considered the premalignant lesion that later on turns into frank malignancy. The lesion on the right waist side of our case showed *res ipsa loquitor*. We believe that our patient had a similar lesion on the left waist as the right waist now, long before the development of carcinoma. However, this conjecture will require further validation to know the exact disease process.

The exact etiology of dhoti cancer is still unknown. Many hypotheses such as dermatoses,[6] chronic irritation, and scarring[7] have been put forth to explain the causation. However, it is

**Figure 1:** Typical style of dhoti wear in Indian males

**Figure 3:** Dermatoses with hypopigmented precancerous lesion on the right waistline

**Figure 2:** Waistline squamous cell carcinoma on the left side

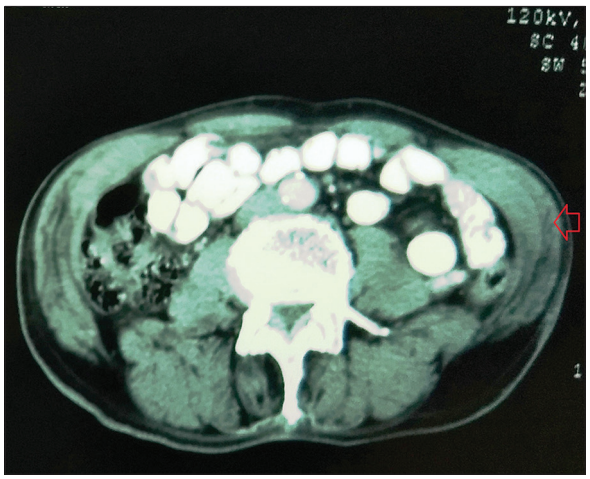


**Figure 4:** CECT scan showing left waistline ulcerated growth (marked with an arrow) involving the abdominal wall with no involvement of the underlying muscles and bones

**Figure 5:** Intraoperative photograph showing wide local excision of the ulcer on the left waistline

**Figure 7:** Postoperative day 7 of the operated site on the left waistline showing good graft uptake

commonly believed to be a variant of scar cancer.[2] Squamous cell carcinoma developing in a scar was first described by Marjolin in 1828.[2] The continuous friction on the skin produces hypopigmentation, acanthosis, and scar formation. This is evident on the left waist of our patient where malignancy developed [Figure 2]. It is interesting that these skin changes can also be seen on the right waist [Figure 3]. It is possible that if patient is put into surveillance at this stage, carcinoma can be avoided by removing the inciting agent. The occurrence of cancer in this particular area of friction with scarring leads to the development of Marjolin like cancer.[2]

Older age of presentation is consistent with the prolonged exposure to continuous friction by tight dhoti.[8] The age, slow growth, and prolonged wearing of dhoti by our patient are also consistent with the available literature.[2,8] It is suggested that lymph node involvement occurs if the malignancy involves the surrounding skin or the underlying muscles.[9] The CECT scan of our patient showed no underlying muscle and bone involvement apparently the reason for no lymph node involvement. We feel CECT scan should be done in all such cases to elucidate the involvement of any underlying soft tissue, bone, or lymph node. Any spread of malignancy to regional lymph nodes entails multimodality management.[9]

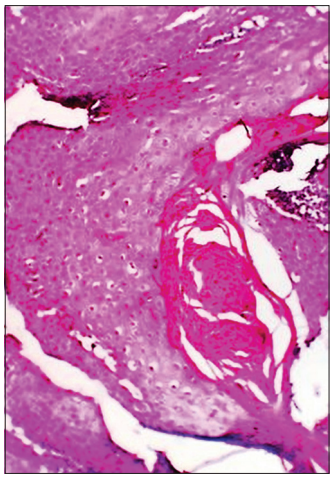

**Figure 6:** HPE (H and E; 400×) of the excised specimen reported well-differentiated squamous cell carcinoma with keratin pearls

**Figure 8:** Long follow-up at 8 months showing well-healed excision site on the left waistline

The treatment of localized disease is excision of the cancer along with acanthotic skin changes followed by primary closure, flap closure, or splint skin grafting (SSG) to cover the soft tissue defect.[2,5] In our case, we excised the ulcerated lesion with adequate margins followed by wound resurfacing by SSG. Wound closure by SSG is rapid, more feasible in case of large post-excision defect and local follow-up is easier especially if locoregional disease spread is evident. Moreover, with SSG, cosmesis is not an issue in older age group and well-concealed area of waist in the context of dhoti cancer.

The prognosis of the disease is not well known due to paucity of the literature at present and the rarity of the condition.[2] However, long follow-up of the treated side and regular surveillance of the other waist is necessary for earlier detection of any malignant transformation.

## Conclusion

This case is remarkable due to its rare site of presentation, simultaneous presence of carcinoma and suspicious

acanthosis on both sides of waist in the same patient. Any hypopigmented patch and acanthosis on the waist area in a dhoti clad man should be viewed with suspicion and continuous surveillance is needed thereof. Proper awareness of the healthcare providers is needed in these cases so that timely intervention is ensured.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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