



Letter to Editor

## Acanthosis Nigricans as a Marker of Ovarian Carcinoma

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**Quick Response Code:**



Dear Editor,

Acanthosis Nigricans (ANs) is a common dermatosis commonly associated with conditions such as metabolic syndrome and insulin resistance. Uncommonly, it may present as a paraneoplastic manifestation. When associated with malignancy, 90% of the times, it is associated with adenocarcinoma of abdominal cavity, commonly of gastric or pulmonary origin. 'Tripe palms' is also a paraneoplastic marker.<sup>[1]</sup> We describe a rare case of an elderly female where the presence of extensive ANs and tripe palms helped in the diagnosis of underlying advanced ovarian adenocarcinoma.

A 68-year-old thin-built female presented to the dermatology outpatient department with progressive darkening and thickening of skin over trunk, face, neck, abdomen and axilla for the past 4 months without any significant weight loss.

On examination, the patient had ill-demarcated velvety thickened skin present over the axillary folds, inframammary area, groin, periocular area, perioral, periocular area, neck, cubital fossae and both feet [Figure 1a-g]. On examination of the hands, there was a velvety appearance of the hands with increased ridging and demarcation of dermatoglyphics, giving a typing 'tripe palms' appearance [Figure 2a and b]. The patient denied any history of diabetes, hypertension or dyslipidaemia. The patient was not on any medications. The patient had a positive family history of breast carcinoma in the elder sibling. With a clinical suspicion of underlying malignancy and the ANs and tripe palms as its paraneoplastic manifestation, the patient underwent blood investigations and ultrasound which revealed iron deficiency anaemia (Haemoglobin 8 g%), normal erythrocyte sedimentation rate, normal liver and kidney functions. Carcinoembryonic antigen levels were 540 U/mL. Ultrasonography revealed a solid mass in the left ovary with a suspicion of malignancy and an ultrasound-guided fine-needle aspiration cytology was performed which suggested adenocarcinoma. Chest X-ray did not reveal any abnormality. Positron emission tomography-computed tomography (PET-CT) did not reveal any metastasis. The patient was planned for surgery and post-operative chemotherapy with paclitaxel and carboplatin. On follow-up visit, the patient was diagnosed with Stage III ovarian carcinoma [Figure 2c and d]. However, the cutaneous manifestations were persistent.

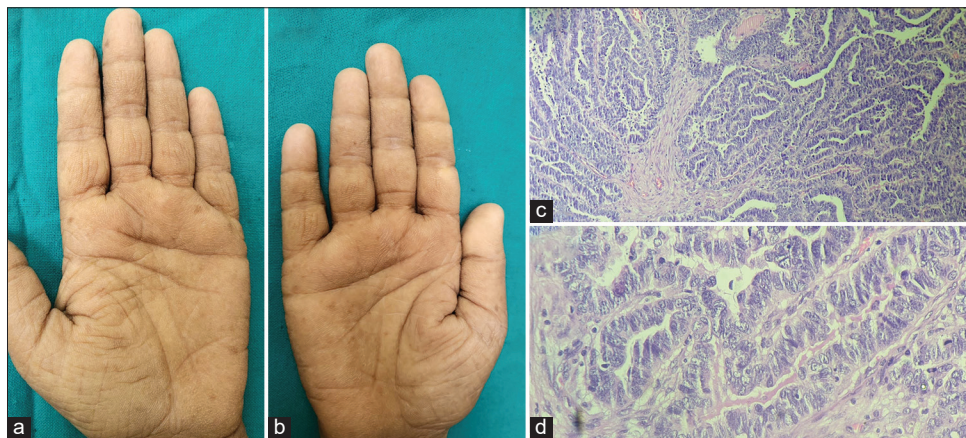
ANs presents as a gradual symmetric thickening, hyperpigmentation and dermal papillomatosis presenting as velvety appearance of skin. It commonly presents over the body folds. AN when associated with neoplasia is also known as 'malignant acanthosis nigricans (MAN)'. It may get

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**Figure 1:** Thickened hyperpigmented velvety skin present over (a) axillary folds, (b) inframammary area, (c) groin, (d) periocular and perioral and periocular area, (e) neck, (f) cubital fossa and (g) both feet.



**Figure 2:** Tripe palms involving (a) left and (b) right hand. (c) Photomicrograph showing tumour arranged in papillary configuration with hierarchical branching pattern (Haematoxylin and Eosin Stain [H&E], ×100). (d) Photomicrograph showing malignant cells exhibiting nuclear polymorphism, nuclear overlapping and prominent nucleoli. (H&E, ×400).

diagnosed before (48%), at the time (21%) or after (31%) the diagnosis of malignancy.<sup>[1]</sup> In our patient, ovarian adenocarcinoma was diagnosed after the diagnosis of MAN. AN differs from MAN in certain aspects. Sudden onset, rapid progression and involvement of face, periocular region, lips, genitalia, mucosae and areolas in addition to flexors favours the diagnosis of MAN over AN. Our patient had a rapid progression over the course of 4 months. ‘Tripe palms’ are also considered as a variant of ANs, and when present with MAN, are almost always associated with an underlying malignancy.<sup>[1,2]</sup> The proposed pathogenesis of AN is the interaction between

tumour growth factor-alpha and epidermal growth factors secreted by the tumour and subsequent upregulation of cutaneous epidermal growth factor receptors.<sup>[3]</sup>

MAN is commonly associated with adenocarcinomas of gastric (29%) or lung (20%) origin. Rarely, it has been reported with a carcinoma of ovarian origin (3.5%).<sup>[1]</sup> With our literature search, there are a total of six cases reported in the literature where AN and tripe palms have been found in association with an underlying ovarian carcinoma.<sup>[4]</sup> Among these six, three case reports were reported where the skin manifestation led to the diagnosis of the malignancy<sup>[5]</sup>

**Table 1:** Case reports of carcinoma ovary presented with TP and MANs with their treatment and response outcome.

S. No.	Age/sex	Diagnosis	Clinical presentation	Treatment
1.	57/F (Kumar <i>et al.</i> <sup>[5]</sup> )	Adenocarcinoma ovary (stage IV)	Presentation for 2 years before diagnosis of carcinoma.	Chemotherapy
2.	47/F (Singh and Rai <sup>[4]</sup> )	Adenocarcinoma ovary (stage III A)	Acanthosis noticed during diagnosis of carcinoma.	Surgery followed by chemotherapy
3.	57/F (Kumar <i>et al.</i> <sup>[5]</sup> )	Adenocarcinoma ovary (stage III C)	Presentation led to diagnosis.	Surgery followed by chemotherapy
4.	52/F (Kumar <i>et al.</i> <sup>[5]</sup> )	Clear cell carcinoma+endometrial adenocarcinoma (stage 1 A)	Presentation led to diagnosis.	Surgery followed by chemotherapy
5.	69/F (Kumar <i>et al.</i> <sup>[5]</sup> )	Serous carcinoma (stage IV)	Presentation led to diagnosis.	Surgery followed by chemotherapy
6.	71/F (Kumar <i>et al.</i> <sup>[5]</sup> )	Adenocarcinoma ovary (stage III C)	Presentation for 4 years before diagnosis.	Chemotherapy
7.	68/F (Index case)	Adenocarcinoma ovary (stage III)	Presentation led to diagnosis.	Surgery followed by chemotherapy

TP: Tripe palm, MAN: Malignant acanthosis nigricans, F: Female

[Table 1]. Our case highlights the importance of such presentation for an early diagnosis of underlying malignancy and warrants better prognosis.

#### Ethical approval

Institutional Review Board approval is not required.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

#### Conflicts of interest

There are no conflicts of interest.

#### Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the

writing or editing of the manuscript and no images were manipulated using AI.

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