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Case report: Mysterious neck metastasis – Role of the dental clinician

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ABSTRACT

This report presents an unusual neck lesion, initially seen by a dental surgeon. The lesion had been present for more than 4 weeks, was asymptomatic, slowly increasing in size and proved to be diagnostically challenging from a clinical, radiological and histopathology perspective. Following excision and full histopathological analysis, a definitive diagnosis remains elusive.

This demonstrates the importance of the dental surgeon as the first point of patient-contact and the patient's relationship with numerous multidisciplinary teams. Promotion of healthy living, screening for abnormal lesions and early referrals by dental surgeons improves prognosis and patients' quality of life. All clinicians need to be vigilant.

1. Introduction

50 % of the population will have cancer at some stage of their life. Deprivation increases this likelihood. Known risk factors include genetics and behaviour. Screening can lead to early detection and treatment.

One of the most common UK cancers is breast, with 56,822 new cases a year, which is 15 % of all cancer cases in both females and males from 2017 to 2019 [1]. Breast cancer metastasis may be the first presentation of the disease [2,3]. This is commonly found in decreasing prevalence in lung, bone, liver, adrenal, brain, skin and kidney [3,4]. The most likely location for skin-involvement is the chest-wall, whereas it is less common to find secondary involvement of the skin in the neck [5]. Presentation includes nodules (46.8 %), to occult metastasis (0.3 %) [6].

This report presents a diagnostically challenging neck-skin lesion identified on a routine dental examination, involving tertiary care multidisciplinary teams.

2. Case report

A 66-year-old female attended for yearly dental review. A skin change on the right-side of the neck had been present for 4–6 months, gradually increasing in size.

Medically, Amlodipine (dihydropyridine calcium-channel blocker) and Atorvastatin were taken, and untreated generalised mild eczema was reported.

A family history of cancer included: sister died of lung cancer aged 50, father died of rectal cancer aged 80, and mother had breast cancer aged 80.

Social history; lifetime non-smoker, alcohol consumption of 4 units per week and non-sun seeker.

A superficial lesion located on the right-side of the neck, level 5, behind sternocleidomastoid muscle was raised (Fig. 1), approximately 30 mm × 20 mm, mild-pink with overlying dilated blood vessels (Telangiectasia), firm, rubbery and mobile, without tenderness, suppuration, bleeding or trauma history. Intra- and extra-oral assessment was otherwise normal.

Differential diagnoses included:

- infective
- inflammatory
- trauma
- scar-tissue keloid
- neoplastic
  - benign or malignant
  - primary or secondary

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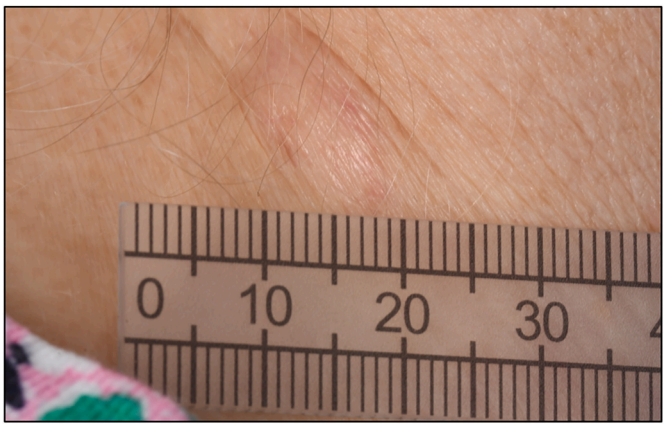

Fig. 1. Initial presentation of skin lesion. Published with the patient's consent.

- idiopathic.

Referral to an Oral and Maxillofacial Consultant resulted in an 8 mm punch biopsy being sent as 'urgent' to histology, leading to differential diagnoses of:

- neoplasia
- reactive lesion
- reorganising lesion.

Healing was uneventful.

Immediate referral was made to the Breast Team, who subsequently referred to the Skin Team.

A malignant epithelial neoplasm was suggested, which, following investigation of molecular markers, was compatible with breast carcinoma (Fig. 2, Table 1). Primary cutaneous adnexal tumour was also considered, whilst histology suggested a primary skin tumour - however, features favoured a breast primary, which had to be excluded.

Breast examination confirmed no suspicious lesions. Additional imaging included mammogram, ultrasound and MRI, which revealed no breast primary. A CT scan and a bone scan revealed no primary cancer or other metastases.

Referral to Plastics for expert excision and further analysis followed.

Excision with a 1 cm margin to deep fascia was sent to histopathology. However, confirming presence of a tumour at the deep margin, a deeper excision was undertaken (Table 1).

Occult cancer of unknown primary site was feasible, as the exact nature of the lesion was unconfirmed.

With concern for breast cancer and strong hormone sensitivity of the tissue, adjuvant hormone therapy (Letrozole 2.5 mg daily) was prescribed, with biannual review.

3. Discussion

This case demonstrates the need for dental teams to be vigilant of 'different' lesions and to refer. In the UK such referrals are seen by a specialist within 2 weeks, receive a treatment plan within 31 days and commence treatment by 62 days. This pathway contributes to early detection and management of cancer, which can improve quality of life, long-term prognosis and survival.

No definitive diagnosis was achieved. Unusually, a primary tumour, was not located. Multidisciplinary Teams reviewed the case, providing extensive knowledge in the collective decision of care provision. Excision demonstrated clear margins, and preventive hormone therapy is prescribed for life. Aromatase inhibitors are the standard of care in post-menopausal hormone sensitive breast cancer, reducing oestrogen production by blocking aromatase and, thus, the potential growth of oestrogen-dependent tumours. Long-term follow-up, especially for the first 5 years, is needed by the whole medical team.

Ethical statement/confirmation of patient permission

Ethical approval was not applicable. Written patient consent was given to publish photographs and histological slides and is available upon request.

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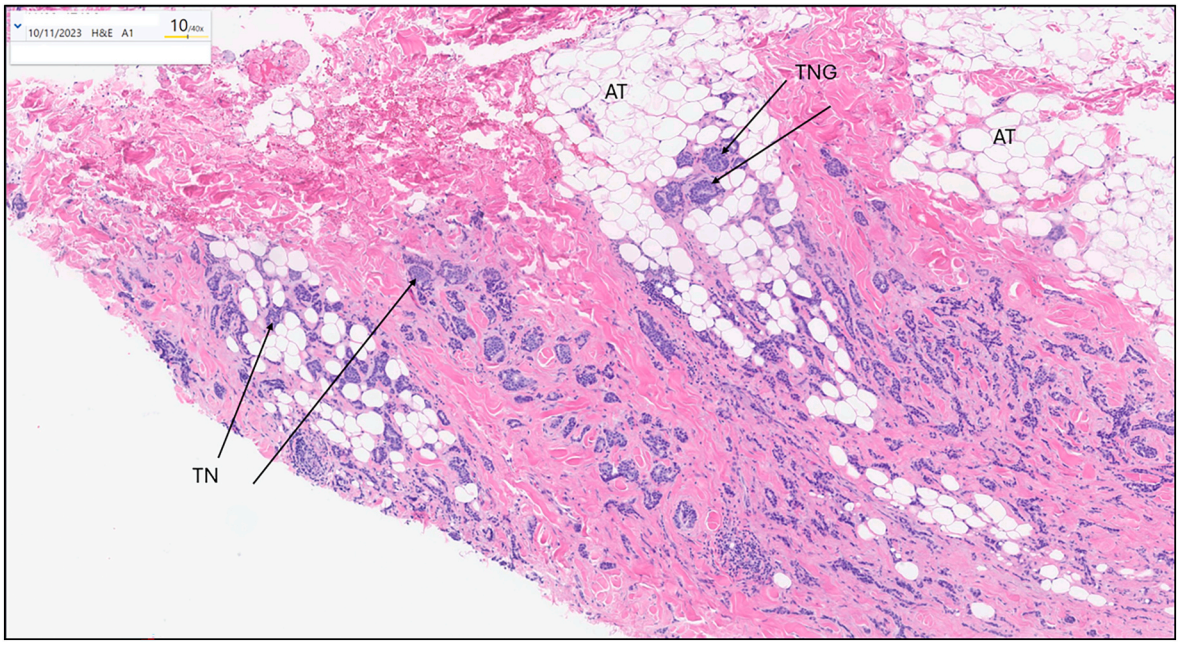

Fig. 2. Haematoxylin and Eosin (H&E) stained histology slide of punch biopsy (10/40x), tumour tissue shows normal adipose tissue (AT) with tumour nests (TN), some of which appear glandular-like with lumen (TNG).

Table 1
Histopathology, Immunohistochemical stain and molecular markers report for punch, excision and deep excision biopsies.

Biopsy	Punch	Excision	Deep Excision
Histopathology			
Macroscopic	8 × 6 × 6 mm	Ellipse 38 × 15 × 15 mm. Ill-defined pale nodule, exophytic, slightly raised. Lesion 18 × 8 × 3 mm.	Ellipse 50 × 10 × 20mm. Linear scar running along skin ellipse.
Microscopic	Infiltrative aggregates of mild to moderate atypical epithelial cells formingduct-like structures lying in the subcutis & deep dermis.	Skin & subcutis show attenuated epidermis overlying a dermal/ subcuticular nodule of infiltrative adenocarcinoma microacinar & Indian file cord patterns within collagenous stroma.	Dermal scarring, fat necrosis & foreign body giant cell reaction consistent with previous surgery. No residual tumour present.
	Within the duct lumen areas of apocrine snouting.	No epidermis connection.	
	Overlying epidermis & dermis are unremarkable.	No in situ disease seen.	
	Eccrine glands also unremarkable.	Tumour extensively present at deep margin & 2 mm from peripheral margin	
Immunohistochemical Stain			
GATA-3	Strong diffuse expression		
Mammaglobin	Strong diffuse expression		
GCDFP-15	No appreciable expression (lifted section)		
CD20, CDX2, CK 5/6, Napsin-A, P40, Sox-10, TTF-1	No expression		
CK 7	Strong diffuse expression		
ER	Strong diffuse expression		
PR	Focal expression		
Molecular Markers			
ER	Positive (score 8, score for proportion 5)		
PR	Positive (score 7, score for proportion 4)		
HER2	Negative (score 1+)		
SS18 – XM204a		Tumour nuclei circled area: 90 % Necrosis circled area: 0 % Cellularity circled area: very High. No fusions and no SS18 involvement.	

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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