



Case Report

Factors related to delayed treatment: A case report of a huge cutaneous horn and review of the literature

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ABSTRACT

We present a case of a man with a giant cutaneous horn over his frontal region. This case has been presented for the size of the lesion, due to delayed treatment, and to illustrate the reasons why the growth of this lesion has been possible in a western country, in the 21st century. It was a solitary, not painful lesion which caused significant aesthetic problems. The diagnosis was based on an ultrasonographic study and the treatment of choice was a surgical excision. This case is an opportunity to review the literature about the cutaneous horns, to talk about the main causes of delayed diagnosis and treatment of cutaneous lesions and, to define the role of the specialist in the assessment of emotions and patient support.

1. Introduction

Cutaneous horn is a slowly progressive keratinized skin lump in an antler-like configuration. The diagnosis is clinical, based on the lesion's morphology [1]. The risk factors include radiations, chronic irritation and human papilloma virus [2]. Cutaneous horns may be symptoms of different diseases such as actinic keratosis (the most common horn cause [37.4%]), squamous cell carcinomas, lentigo malignant melanoma, verruca vulgaris, seborrheic keratosis, molluscum contagiosum or Kaposi's sarcoma [3,4].

We present a case of a 61-year-old Italian man with a giant cutaneous horn over his frontal region. This case has been found interesting because of the delayed medical treatment with an outstanding growth of the lesion. Our aim is to discuss the reasons of a such important skin lump growth in a developed country, in the 21st century. The delay can be influenced by sociodemographic variables like age, gender, ethnicity or SES (socioeconomic status). Older people [4] and people from low SES groups [6] didn't seek for prompt medical care. The risk significantly increases in people who are living alone, in rural areas, and with a different culture [7]. Psychological factors may also play a role in patient's delay. A high level of fear can minimize the seriousness of symptoms. This phenomenon is called health-related 'defensive bias' [6], 'optimistic bias' or 'denial' [5] which make seeking treatment less urgent and produce longer delay.

2. Case report

A 61-year-old man presented at our department with a 10 years history of a facial lesion (Fig. 1). There wasn't a familiar history of malignant skin lesions. He didn't consume alcohol and he wasn't a smoker. In the past he has undergone a right hemicolectomy and a cardiac ablation for a SVPT (supraventricular paroxysmal tachycardia). He suffered from diabetes, hypertension, high cholesterol levels and obesity (BMI of 33). He lived alone in a small house in the countryside.

The patient came to our attention with a painless slowly growing lesion in the central portion of the frontal region, which gradually progressed from a small mass into a horn. It was a solitary lesion of about 10–11cm in length with an important keratinized layer of epidermis. There was no regional lymphadenopathy or bleeding. The lesion caused significant aesthetic problems. The patient complained about the difficulty to sleep in prone position and to wear hats.

The lesion had a long history of progressive and slow growth not associated with any pain or discharge. There was no history of similar lesions elsewhere in the body. For these reasons the patient didn't seek for prompt medical care. At first, he used to hide the horn in his hair and then when the lesion had grown, he wore a hat every day. After a few years the patient could no longer keep hidden the horn so he didn't go out because of his shame. His sister helped him with grocery shopping and other everyday tasks. He was too scared of the diagnosis to see a specialist, he thought he could live with the lesion and he didn't want to

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undergo surgery. Over the years the horn has continued to grow until his sister finally persuaded him to see a specialist.

All laboratory parameters were within the normal range. Ultrasonography confirmed the lesion involved the subcutaneous tissue and the underlying frontal muscle. It was taken into consideration different cause of cutaneous horn such as viral wart or squamous cell carcinoma. A preoperative diagnostic biopsy was performed, which revealed a mixture of squamous epithelial cells and trichilemmal keratinized debris.

The lesion was surgically excised in local anaesthesia (Fig. 2, Fig. 3). Primary closure of the wound was performed without any grafts or local flaps. The post-operative period included daily medications and a pain therapy based on NSAIDs (nonsteroidal anti-inflammatory drugs).

The patient was followed in our clinics and underwent a dermatologic control once a year. He was highly collaborating and adherent to the therapy. No recurrences occurred at one year from the surgery, neither complications due to the treatment.

3. Discussion

The literature shows that patients' choice and thinking process is influenced by emotional status despite the attempt to make decisions based on evidence [8–11]. Patients are active participants of the care process and not passive recipients. The new situation impacts the emotional status and that attention is focused on the negative aspects [12], allowing a risk perception distorted and, consequently, suboptimal health decisions [5]. Doctors play important role in training patients to better process the diagnosis and to properly control their emotion in order to assess all the treatment options. On the other hand, there are situations and aspects independent from doctors, such as the socio-demographic factors (age, gender, SES or ethnicity), the family support, the living environment and the clinical variables of the lesion.

In 1558 was noted the earliest known case of cutaneous horn in a Welsh woman, but this skin lesion has been a matter of discussion to mankind since immemorial time. Even though cutaneous horn is a relatively uncommon entity, different cases have been described. For example, Bo Lin et al. wrote about a giant cutaneous horn on the cheek in a 83-year-old woman with an 18-year history of growth [1], Oded Nahlieli et al. reported four cases occurring in the head and neck region [13], G. N. Purohit et al. presented a case of a cutaneous horn following injury to pinna in a 55-year-old male farmer [14], William Leppard et al.

reported a case of a giant cutaneous horn of the scalp in a 52-years-old African American female [15], Michal et al. described four cases of gigantic cutaneous horns of the scalp [16] and K. K. Sanjeeva et al. presented a giant cutaneous horn overlying a verruca over the left gluteal region in a 64-year-old man [17]. Despite this, no one has ever focused on the causes that have allowed such an important growth of these lesions. Each of these case reports referred to people older than 50 years old, with a long history of growth of the skin lesion, which has been diagnosed late. All these patients never complained about pain or any symptoms other than discomfort and privately had the personal feeling of stigmata and shame. Some of them hid the horn in their hair, beneath a veil or a hat (Table 1).

Patient's delay is most frequently described as the "length of delay between the onset/discovery/recognition of signs and symptoms and a patient's first visit to a health care/medical provider" [5]. The main factors involved in delay are sociodemographic, clinical or emotional. The doctor should manage these conditions, when possible. Older people [4] and people from low SES groups [6] had a tendency to hesitate in consulting an expert. Young subjects, with no experience of cancer, very seldom consider the possibility to have a malignant disease. The relationship between gender and patient's delay is not very strong and the same holds true for education [5,6]. Patients who had been advised and supported by family were at significantly lower risk for delay; in contrast, the risk significantly increased in individuals of foreign ethnicity, those who were living in remote areas or alone, and those who were infrequently seeking medical care [7]. Therefore, in our patient, the lack of family support, the environment of rural life and the isolation, have played an important role in the delay of diagnosis.

With regards to clinical variables, in many cases previous medical history has an inverse correlation on an early visit to the doctor. Delay was significantly more frequent in individuals with serious co-morbidity and for lesions detected by somebody other than the patient. Univariate analysis of data [7] demonstrated that most obvious lesion's characteristics that prompted patients to visit a specialist are: newly presenting lesions, size increase, colour change, accessible topography, presence of pain/discomfort, scabs/crusts or non-healing wound. In our case the patient had some co-morbidity (diabetes, hypertension, high BMI score) and had a right hemicolectomy. In addition, the horn wasn't painful, didn't cause discomfort at the begin, and didn't bleeding. All these elements have certainly contributed to the delay.

Apart from sociodemographic and clinical variables, psychological



Fig. 1. Cutaneous horn (frontal view).



Fig. 2. Cutaneous horn (lateral view).



Fig. 3. Removed cutaneous horn.

factors, like fear, anxiety and worry also play a role in patient's delay. Feelings can be elicited by pain or discomfort, presumed diagnosis, anticipated consequences of treatment and reinterpretations of the illness condition [5]. Depending on the cause of the fear and the way people manage it, the emotion of fear could lead to either help-seeking behaviour or to delay. An important predictor of a patient's help-seeking

behaviour seems to be the intensity of negative feelings. A systematic review [18] showed that high levels of fear were associated with earlier help-seeking in cancer patients. The effect of the low-intensity level of such emotions was more difficult to understand. On this basis, it can be expected that people who are more frightened will have a greater chance of getting medical help earlier than those without such a strong emotional response [19]. In a study of 860 patients treated for skin tumors (other than melanoma), denial was demonstrated in 71% of them, with a waiting time of more than ten years in 1.2% of the patients [19, 20]. The most common patient-specific factor responsible for delayed presentation for NMSC diagnosis and treatment is denial (including: *thought it would go away, thought it wasn't important, thought they could self-treat, too busy, afraid it might be something dangerous*). In some cases, denial is indicative of a lack of understanding or recognition of the problem, not a psychologic defence mechanism. As well as denial, fatalism, often expressed as “*what will be will be*” or “*there is a reason for everything, I do not believe any intervention may change my life*”, occasionally backed by religious beliefs, is also identified as a significant factor associated with delayed presentation. Denial and fatalism were definitely key elements for the delayed diagnosis and treatment in our patient. He thought he could live with the horn and maybe it would go away without surgery. Anyway, he was too scared for any treatment.

Coherently, training patients in their personal interoceptive ability will help them better evaluate the event, the assessment of the emotions can guide specialists in the individuation of the intervention to moderate it. Considering which factors can moderate the role of emotion is crucial for improving the patient's decision-making process [21–26].

At the end of his diagnostic-therapeutic process, the patient was extremely satisfied of the final result and regret not having sought medical advice before.

4. Conclusion

Cutaneous horns are challenging lesions with social and medical implications. We reported this particular case for several reasons: his giant size, the lack of symptoms, the aesthetic and psychological problems that his lesion caused. In the present case has been highlighted an important personal neglect, the absence of awareness, superstitious beliefs and misperception.

Table 1
Summary of reported cases of cutaneous horn.

	Gender	Age	Nationality	Employment	Location	Dimension	Clinic	Growth Time	Histopathological examination	Recurrence after 1 year
Bo Lin et al., [2018]	Female	83	NS	None	Cheek	Length: 5.5cm Width at the base: 3.0	None	18 years	Squamous epithelial cells + trichilemmal keratinized debris	None
Oded Nahlieli et al., [1997]	Male	50	NS	Farmer	Lower Lip	NS	Occasional soreness	2 years	NS	NS
	Woman	70	Bedouin	None	Malar Region	2.5 × 2.5cm	NS	7 years	NS	NS
	Man	69	NS	Farmer	Helix of Ear	1 × 0.8cm	NS	54 years	NS	NS
	Woman	72	European	None	Sternal Notch	3 × 3cm	NS	Several years	NS	NS
G. N. Purohit et al., [2011]	Male	55	NS	Farmer	Pinna	Length: 6cm Width: 0.5cm	NS	2 months	Hyperkeratosis and hyperplasia of squamous epithelium without evidence of malignancy	NS
William Leppard et al., [2013]	Female	52	African American	NS	Scalp	Length: 12cm Width: 3cm	Drainage and Crusting	Several years	Verruca vulgaris	None
Michal et al., [2002]	Female	55	European	NS	Scalp	Length: 25cm Width: 2.5cm	None	30 years	Squamous epithelial cells and tricholemmal keratinized debris	None
	Female	78	NS	None	Scalp	Length: 20cm Width: 2cm	NS	8 years	Squamous epithelial cells and tricholemmal keratinized debris	None
	Female	63	NS	NS	Scalp	Length: 18cm Width: 2.5cm	None	15 years	Squamous epithelial cells and tricholemmal keratinized debris	None
	Female	83	NS	None	Scalp	Length: 17cm Width: 2cm	NS	10 years	Squamous epithelial cells and tricholemmal keratinized debris	None
K. K. Sanjeeva et al., [2015]	Male	64	NS	NS	Gluteal Region	Length: 15cm Width: 10cm	Discomfort	Several years	Hyperkeratosis and papillomatosis without evidence of malignancy	NS
O. Zehou et al., [2012]	Male	52	NS	Office worker	Right Shoulder	Length: 30cm Width: 17cm	Functional Impotence and Pain	20 years	Metatypical invasive carcinoma with epidermoid inflection	None
	Male	62	NS	None	Pubis	14 x 12 × 11cm	NS	6 months	Undifferentiated primary skin cancer with neuroendocrine component	NS
	Female	78	NS	None	Right Elbow	Major axis: 11cm	Bleeding	Several years	Porocarcinoma	Yes

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Ethical approval

No ethical approval needed. We describe a case report and review of the literature.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Marta Starnoni: study concept, data interpretation.
Giorgio De Santis: study concept.
Francesca Lolli: writing the paper.
Massimo Pinelli: study concept, data interpretation.

Registration of research studies

The research does not involve human participants but it is a case report and review of the literature.

Guarantor

Marta Starnoni.
Giorgio De Santis.
Francesca Lolli.
Massimo Pinelli.

Informed consent

The patient gave informed consent for the publication of this case report.

Provenance and peer review

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Trial registry number

Nothing to declare.

Declaration of competing interest

No conflict of interest.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.amsu.2020.11.016>.

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