



CASE REPORT

## Cryotherapy as a method of choice in the treatment of cylindromas on the elderly

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**Abstract:** The elderly (*i.e.*, geriatric group) are often vulnerable to skin cancer. These patients often cannot cope with biopsies and surgical excisions. A good alternative is cryotherapy. Cylindroma is a benign adnexal tumor of the skin with eccrine and apocrine differentiation, and commonly occurs in the scalp. We present the case of an 82-year-old woman with a number of large tumors located on the head, which were effectively removed via cryotherapy with liquid nitrogen as a palliative treatment. No recurrence was detected during the two-year follow-up. Cryotherapy with liquid nitrogen is an effective and non-invasive method for the treatment of benign skin tumors in the elderly.

**Keywords:** skin cancer; cryotherapy; tumor, elderly; cylindroma; carcinoma

**Citation:** Brzezinski P, Sousak M, Di Martino Ortiz B, Chiriac A. Cryotherapy as a method of choice in the treatment of cylindromas on the elderly. *J Surg Dermatol* 2019; 4(1): 17; <http://dx.doi.org/10.18282/jsd.v1.i3.17>.

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**Received:** 7<sup>th</sup> October 2018; **Accepted:** 20<sup>th</sup> November 2018; **Published Online:** 3<sup>rd</sup> December 2018

### Introduction

Cylindroma is a rare benign adnexal neoplasm. It is often observed on the scalp and face (usually in the vicinity of the ear). Cylindromas are rarely found on the trunk or extremities<sup>[1]</sup>. It is also known as “turban tumor”, as the extensive scalp involvement can create a clinical morphology that resembles a headpiece. The name cylindroma originated from the specific appearance of tumor cells with cylindrical pseudolumina. Cylindromas could be solitary or multiple, develop on a sporadic basis or as part of Brooke-Spiegler syndrome. It is caused by an autosomal dominant mutation in the CYLD gene, mapped on chromosome 16q12–13<sup>[2]</sup>. There is no sex predilection.

Early diagnosis and management can offer patients

with the best possibility of a cure. Treatment depends on the tumor’s size and location, and surgical excision is reported as the first-choice therapy<sup>[2,3]</sup>.

We describe the case of an 82-year-old woman with a number of large tumors located on the head, which were effectively removed via cryotherapy with liquid nitrogen.

### Ethics statement

Prior to the study, the patient provided her ten consent for the examination and biopsy after having been informed about the procedure.

### Case report

An 82-year-old Caucasian woman presented with an approximately eight-year history of gradually enlarging,

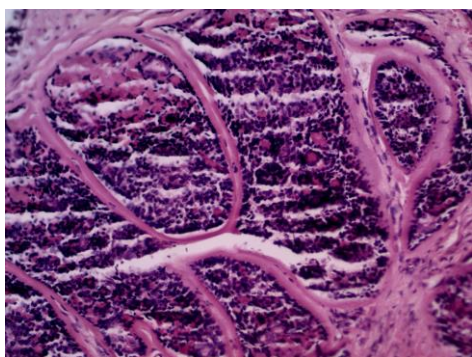
asymptomatic scalp nodules. Clinical examinations showed five nodules on the frontal region of the head (**Figure 1**). The nodules were not painful. There were no palpable lymph nodes on the head area. Results of a recent routine laboratory panel were normal.

One small-sized nodule was removed via deep biopsy and submitted for histologic examination. It demonstrated large, lobulated nests of basaloid cells arranged in a jigsaw puzzle pattern (**Figures 2A** and **2B**). Skin biopsy results, along with clinical pictures, showed a classic cylindroma diagnosis.

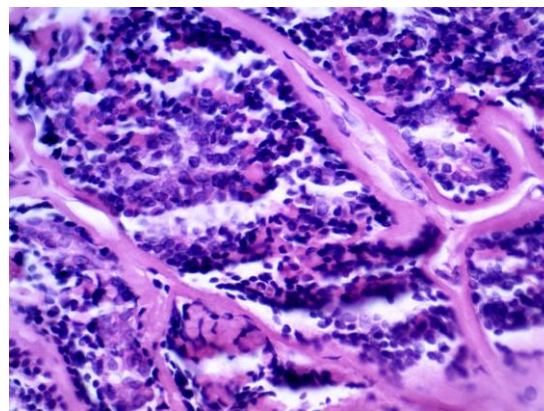
Due to the age of the patient and numerous medical conditions (*i.e.*, thrombosis, heart failure, hypertension) we used cryotherapy with liquid nitrogen (as open spray); 2 times a week for 3 months (2 cycles of freeze/ thawing). In the two-year follow-up, there was no recurrence.



**Figure 1.** Tumors on the head in the frontal region of an 82-year-old female patient (before treatment)



**Figure 2A.** Histopathology: Dermal neoplasm with a multinodular, circumscribed pattern at scanning magnification (HE 10X)



**Figure 2B.** Histopathology: Hybrid lesions with areas of cylindroma and spiradenoma in juxtaposition are seen (HE40X)

## Discussion

Cylindroma is a benign adnexal tumor in elderly individuals. It has no sex predilection<sup>[1,3]</sup>. It covers the scalp and is thus, also called “turban tumor”.

Cylindromas also occur as a hybrid with spiradenoma, a phenomenon that has been referred to as cylindrospiradenoma or spiradenocylindroma<sup>[4]</sup>. Malignant transformation is extremely uncommon<sup>[5]</sup>.

Histopathologically, cylindromas are seen as circumscribed dermal or subcutaneous lesions. Individual nodules are composed of mosaic nests of undifferentiated basaloid cells with small, dark-staining nuclei, and scant cytoplasm. Individual nests fit tightly and neatly within larger nodules in a pattern that has been likened to that of a jigsaw puzzle (as seen in **Figure 2A**). The nests are surrounded by a rim of densely eosinophilic basement membrane material and contain small, dark cells (as seen in **Figure 2B**). In the small, dark cells, we can often see peripheral palisading<sup>[6]</sup>.

Differential diagnosis includes benign adnexal neoplasms with apocrine and eccrine glands with basaloid cells; but the most similar is the spiradenoma which is composed of a single or few nodules of basaloid cells. This tumor involves the full thickness of the dermis and has round aggregations with smooth borders, sometimes extending into the subcutaneous fat<sup>[4,7]</sup>.

Local excision remains as the treatment of choice. Other treatments for cosmetically bothersome cylindroma include standard excision, dermabrasion, shave excision with electrodesiccation to the base, CO<sub>2</sub> laser ablation, and radiotherapy<sup>[8]</sup>.

Our patient had multiple comorbidities. Cryosurgery turned out to be the method of choice. There are no

studies in literature indicating the best surgical approach, and there are no sufficient follow-up data in cases with multiple local recurrences either.

Cryotherapy is an alternative treatment option when surgical removal of a tumor may not be easy or, for some patients, impossible. It is a minimally invasive local modality, which is relatively inexpensive and less painful during and after the procedure, and can be done in an outpatient clinic<sup>[9,10]</sup>. In our case, our procedure was successful as demonstrated by the patient in the 2-year follow-up period (**Figure 3**).



**Figure 3.** Lesions on a 82-year-old female patient after treatment with liquid nitrogen

## Conclusion

Cryotherapy with liquid nitrogen is an effective, non-invasive method for the treatment of benign skin tumors in the elderly. However, before choosing such a method, surgical excision of the lesion should be considered along with patient's age or comorbidities. Cryotherapy is an effective alternative treatment and not a treatment of choice.

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