

Plica polonica: Trichoscopic findings with a brief literature review

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ABSTRACT

Plica polonica is a common but rarely reported acquired condition characterized by sudden onset of irreversible entanglement of the hair. Psychological disturbance is a risk factor for plica formation. Plica polonica was considered a disease of the past caused by poor hygiene and haircare in psychiatric patients. In view of its clinical rarity, we describe the case of a 50-year-old Muslim woman of Kashmiri ethnicity presenting with plica polonica to explain the trichoscopic findings gathered in the process of medical examination. The patient had attempted the treatment of the condition with various shampoos and conditioners but without improvement. There was no history of mental illness either in the patient or the patient's family. The hair was dry, lusterless, densely adherent, but without discharge, foul odor, or lymphadenopathy. Trichoscopy revealed varying shades of brown and crisscrossing of hair shafts resembling an intertwined mesh of wires with concretions of the hair shafts. The patient was advised to cut the matted hair.

Key words: Plica polonica; Hair; Trichoscopy

INTRODUCTION

Plica polonica—also known as plica neuropathica or Polish plait—is a rare acquired disorder of the hair shafts in which groups of hair are matted, together forming a malodorous, encrusted, sticky, and moist mass [1]. Not combed or cut, long hair tangles leading to the formation of twisted masses of matted ropes of hair known as dreadlocks. Plica polonica used to be prevalent in 19th-century Poland, hence assuming the name *plica polonica* or *Polish plait*. The then habit of wearing tight fur caps and the superstitious belief that a lousy scalp was a synonym of health contributed to the prevalence of plica polonica in 19th-century Poland. Clinically, plica polonica manifests itself as a compact mass of scalp hair with irregular twists and irreversibly tangled plaits, firm-to-hard impenetrable masses of keratin concreted with dirt and exudates [1].

Its exact etiopathogenesis remains unexplained, but the risk factors include psychological disturbance, secondary scalp infection, infestation of the scalp,

or the use of shampoos with cationic surfactants. Treatment involves cutting the matted hairs.

CASE REPORT

A 50-year-old Muslim female from an average urban background consulted us complaining of matted scalp hair persisting for two months prior. The patient gave a history of having had straight hair without curls, frequent application of hair oil, and washing the scalp hair once to twice a week in plain water. After the sudden death of her brother, she kept her hair locked over the vertex for a period of two weeks without washing the hair. During this period, she made no attempt to disentangle the matted scalp hair or to use shampoo or soap to wash. Since she noticed sudden tangling of the scalp hair in the hair lock on the vertex, she had attempted the treatment of the condition with various shampoos and conditioners but without improvement. There was no history of plica before this incident. She denied application of hair dye two months prior, although she had used it often in the

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past. There was no history of mental illness either in the patient or her family and no history of behavioral disturbance. The patient was not on mental health medication. There was no itching or discharge and no suggestion of scalp hair disease.

Upon examination, the hair was dry, lusterless, densely adherent to the individual hairs, but not to the scalp. There were numerous tangled bunches of long hairs, greater in number over the parietal and occipital areas of the scalp (Figs. 1 and 2). There was no evidence of discharge from the scalp and no foul smell. There was no evidence of pediculosis capitis or other primary scalp or hair disorders. There was no cervical or occipital lymphadenopathy. Trichoscopy (DermLite DL3N, USA, 10×) revealed varying shades of brown and crisscrossing of the hair shafts resembling an intertwined mesh of wires. The hair fibers showed thickening and concretions due to hair shaft damage

(Figs. 3 and 4). The scalp could not be visualized in either a clinical or trichoscopic examination. Upon potassium hydroxide examination, fungal hyphae were found absent. A qualified psychiatrist conducted a psychological evaluation to reveal no abnormalities. The patient seemed to have developed the condition initially due to neglect and lack of hygiene, and then due to the weathering effect of harsh shampoos. The trichoscopic pattern also resembled that of cosmetic weathering. The patient was advised to cut the matted hair.

DISCUSSION

The term *plica neuropathica*, an alternative designation of *plica polonica*, was coined by Le Page in 1884 to describe a case of sudden-onset hair entanglement in a 17-year-old female suffering from hysteria [2].



Figure 1: A compact, matted mass of dry, lusterless, tangled hair with no visualization of the scalp in the parietal area.



Figure 2: A compact mass of dry, lusterless, tangled hair in the occipital area.



Figure 3: Trichoscopy revealing varying shades of brown and crisscrossing of the hair shafts resembling an intertwined mesh of wires; arrows pointing to the thickening of the hair shaft. (Non-polarised mode, DermLite DL3N, 10×).

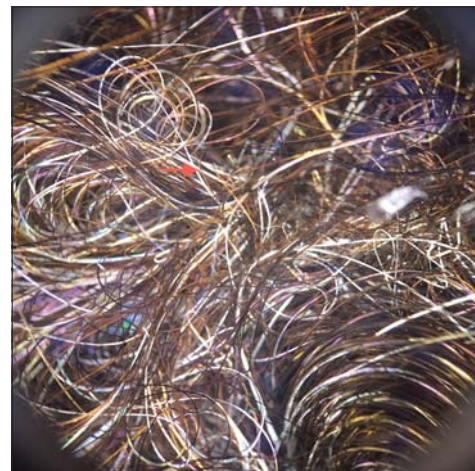


Figure 4: Similar findings in the Polarised mode (10×).

Le Page attributed this uncommon phenomenon to “nerve force,” while the patient’s parents believed it to be a “visitation from God” [2]. Mullin reported more instances of plica polonica. The first records of dreadlocks go back to 2500 BCE with the dreadlocked Hindu deity Shiva and his followers reported in the Vedas, Indian religious scriptures [3].

Bogaty and Dunlap first used the term *matting of hair* in 1970 and compared the condition to *felting* [4]. Felting in the textile and wool industry causes conglomeration of contiguous fibers when exposed to friction and compression in a liquid medium. The pathogenesis of plica polonica has not been fully understood and different etiopathological mechanisms have been proposed, including physical, chemical, and behavioral factors [1,5,6].

Other pathogenetic factors may include long hair and vigorous rubbing of wet hair in a rotatory manner [7]. Neglect of scalp care, constant avoidance of haircutting, and psychological disorders have also been proposed as relevant factors. Habitually uncut, the hair may begin to display areas of cuticular irregularities, which could interdigitate and enhance matting. Loss of cuticles may lead to the exposure of the sticky cortex, causing the hairs to adhere to one another [8]. Plica polonica has also been reported to follow irritant contact dermatitis of the scalp [9], and in two cases of pancytopenia following the use of azathioprine, attributed to the cuticular damage of the hair shaft in the presence of inadequate haircare habits [10,11]. Some superstitious beliefs may also encourage the application of sticky materials on the hair together with avoidance of washing and combing. A common superstitious belief maintains that such negligence helps in curing internal illnesses and that cutting hair brings poor health. Plica polonica has also been attributed to longitudinal splitting and weathering of the hair shaft due to vigorous friction and frequent use of harsh shampoos. Dermoscopy of plica polonica reveals intertwining of the hair shafts, matting, and honey-colored concretions resembling a wrangled mesh of wires [12]. Cosmetic weathering may also give rise to such concretions due to acquired trichorrhesis nodosa caused, in turn, by hair shaft splitting and frictional forces.

Plica polonica is a condition with well-defined trichoscopic findings and can as well be attributed to

the haircare practices of the modern day. In any case, the treatment of plica polonica involves the cutting of the affected hair. Its early stages may be reversible and manual separation with organic solvents can be attempted, together with avoidance of rotatory rubbing, regular trimming of the hair, and avoidance of trigger factors such as those set forth earlier. The further risk of matting can be reduced by haircare measures such as regular hair cleaning with mild shampoos, gentle oiling, combing to avoid tangles, and regular hair trimming.

Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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