INTRODUCTION
Cutis verticis gyrata (CVG) is a rare morphological condition of the scalp characterized by ridges and furrows resembling the surface of the brain. Primary and secondary types of this condition exist. Primary CVG occurs predominantly in men and has often been associated with mental retardation or neuropsychiatric disease, such as seizures and Schizophrenia. The onset is typically after puberty, and the folds are usually symmetrical. In secondary CVG, the appearance of skin folds may be more asymmetrical and can appear at any age. It has been linked to local inflammatory skin conditions, such as eczema and Psoriasis, and to systemic illnesses, such as Amyloidosis, Syphilis, Myxoedema, Ehlers-Danlos syndrome, and insulin-resistance syndrome. Acromegaly and Pachydermoperiostosis are two conditions that often present with secondary CVG. Although CVG may be disfiguring, the process is essentially benign and no intervention is required. Surgical repair may be implemented if desired by the patient. Surgical modalities range from simple excisions to tissue expansion and skin grafts for those cases with more extensive scalp involvement. CVG has been very rarely associated with underlying malignancy. We report its occurrence in a patient of carcinoma breast.

CASE REPORT
A 60-year-old lady, known case of carcinoma breast, came to Dermatology Outpatient Clinic, Combined Military Hospital, Rawalpindi, in April 2009, with cutaneous eruption on scalp, face and hands. Her medical history revealed that in December 2000 she was diagnosed with infiltrating ductal carcinoma of the left breast. She underwent radical mastectomy on the left side along with combination chemotherapy with doxorubicin and cyclophosphamide and local radiation therapy. Later, hormone therapy was started with Letrozole. She remained symptom-free and was lost to follow-up. About a year ago, she presented with gradual swelling and thickening of left arm, easy fatiguability and dizziness off and on.

On examination, she had erythematous, indurated diffuse plaques on the left arm along with enlarged, hard and non-tender left cervical lymph nodes. CT scan of chest revealed metastatic deposits in lungs. Clinically she was diagnosed to have recurrence of the disease with pulmonary secondaries. Her second line chemotherapy was started with single agent docetaxel. After four cycles of chemotherapy she developed skin eruptions on the hands, face and scalp. At this time dermatologic consultation was sought. Her scalp skin, thickened, soft and spongy, was thrown into folds and furrows. The facial skin exhibited no thickening. On inquiring, she informed that since the diagnosis of carcinoma breast, she has noticed gradual thickening and folding of scalp skin. On the vertex, the folds were from anterior to posterior as shown in Figure 1, but transverse in the occipital region (Figure 2). The overlying skin colour was unchanged and there was slight maceration in the depths of furrows. There was no adherence of the scalp tissue to underlying bone. There

ABSTRACT
Cutis verticis gyrata is a long lasting and progressive condition in which there is hypertrophy and folding of the scalp skin. It typically affects the vertex and occipital region; however, it may involve the entire scalp. Classically, it has been divided into primary and secondary forms. Primary has been sub-divided into primary essential and non-essential. Secondary forms are commonly due to systemic diseases, inflammatory dermatoses, underlying nevoid abnormalities or trauma. The association between cutis verticis gyrata and malignancy is rare. It has been described in patients of leukemia, endocrine tumours and malignant melanoma. We present a case of cutis verticis gyrata in a patient of carcinoma breast.

Key words: Cutis verticis gyrata. Secondary infiltrating ductal carcinoma. Breast.

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Cutis Verticis Gyrata Secondary to Infiltrating Ductal Carcinoma Breast
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were eczematous lesions on the scalp, face and hands extending to the forearms. Considering the eruptions to be a side effect of docetaxel, it was replaced with paclitaxel. The patient's skin was treated with emollients, topical steroids and oral histamine with advice about maintaining good hygiene of scalp, care of furrowed skin. The patient responded satisfactorily to treatment, as shown in Figure 3 and 4. Skin biopsy for histopathological examination was done once the eczematous lesions settled. It showed a generally normal appearance of skin with slightly prominent pilosebaceous units and hypertrophy of the collagen bundles. There was no evidence of any malignancy. The patient underwent chemotherapy with paclitaxel and has not come for follow-up visits.

**DISCUSSION**

Cutis verticis gyrata describes hypertrophy and folding of the skin of the scalp to present a gyrate or cerebriform appearance. The folds are usually arranged in an antero-posterior direction but may be transverse over the occiput. Unna introduced the term cutis verticis gyrata in 1907, later Polan and Butterworth established the classification of CVG in 1953, dividing CVG into primary and secondary forms.\(^4\)

In 1984, Garden and Robinson improved the classification by proposing new terms; primary essential and non-essential subtypes. In primary essential CVG no other abnormality is found. Its aetiology is unknown, although genetic and endocrinological factors are suspected to be of pathogenetic relevance. Primary non-essential CVG can be associated with mental deficiency, cerebral palsy, epilepsy, Schizophrenia, cranial abnormalities (microcephaly), deafness, ophthalmologic abnormalities (cataract, strabismus, blindness, Retinitis pigmentosa), or a combination of these.\(^5\) Secondary forms are commonly due to systemic diseases, inflammatory dermatoses, underlying nevoid abnormalities or trauma.\(^2\) Secondary CVG has been described with Pachydermoperiostosis, melanocytic naevi or hamartomas (cerebriform intradermal naevus), neurofibroma, cylindroma, naevus lipomatosus, connective tissue naevus, acromegaly, diabetes mellitus, autosomal dominant insulin-resistant syndrome, myxoedema, cretinism, amyloidosis, Beare-Stevenson syndrome, Noonan syndrome, Turner syndrome, Supernumerary X chromosome syndromes (including Klinefelter syndrome), hereditary neuralgic amyotrophy, intracranial aneurysm, intraventricular ependymoma etc. CVG has been associated with misuse of anabolic steroids.\(^6\)

CVG is a long lasting and progressive condition. Most primary cases develop after puberty and often (90%) before 30 years of age. On the other hand, some secondary forms, like cerebriform intradermal naevus, may be present at birth, or can appear at any age. In primary CVG, a male-to-female ratio of 5:1 or 6:1 is observed. The incidence of CVG may appear to be lower in women because longer hair may camouflage the condition. In primary CVG, folds are usually symmetric; in secondary CVG, folds may be asymmetric. The treatment is symptomatic, with stress on personal hygiene to keep the depth of the furrows clean. Surgical correction can be helpful in selected cases. The association between CVG and malignancy is rare. It has been described in patients of leukemia and of endocrine tumours.\(^7,8\) Similarly, secondary cases of CVG associated with congenital melanocytic naevi or hamartomas (cerebriform intradermal naevus) may later be complicated by malignant melanoma developing within them.\(^9,10\)

**REFERENCES**


