Confluent and reticulated papillomatosis (CARP)

Confluent and reticulated papillomatosis is an uncommon skin condition affecting the trunk, neck and underarms. It is characterised by an asymptomatic, darkly colored rash that has a net-like configuration.

Who?

Confluent and reticulated papillomatosis mostly occurs in young adults. The mean age of incidence is 15 years, with a range of 8–32 years]. It has been reported worldwide in all racial groups and ethnicities, but it is reported to be most common in Caucasians.

Cause?

What triggers confluent and reticulated papillomatosis remains unclear. Disordered and hyperproliferative keratinisation has been observed on light and electron microscopy. The possibility that this is due to skin infection is supported by the success of treatment with antibiotics.

Dietzia papillomatosis is the current leading infectious candidate. This is a gram-positive actinomycete that was first isolated from a patient with confluent and reticulated papillomatosis in 2005.

Earlier observations that antifungal agents were effective, supporting the role of Malassezia furfur in the pathogenesis, were likely due to misdiagnosis of pityriasis versicolor.

Genetic factors may also be involved.

Several cases of familial confluent and reticulated papillomatosis have been reported.

Mutation of the gene for the protein keratin-16 (K-16) has been found in some cases.

Insulin resistance, which causes diabetes mellitus and polycystic ovarian syndrome, has been suggested as a contributing factor to confluent and reticulated papillomatosis, but evidence is weak, as most affected patients do not have metabolic syndrome.

Clinical features?

Confluent and reticulated papillomatosis is characterised by multiple 1–5 mm, hyperpigmented, scaly macules or papillomatous papules.

These often form confluent patches or plaques centrally, and a reticular (net-like or lace-like) pattern peripherally.

They most commonly occur on the upper trunk, neck and axillae. They may also extend anteriorly down to the pubic region and posteriorly to the natal cleft. The antecubital and popliteal fossae and forehead are rarely affected.

The eruption does not involve mucosal surfaces or nails.

Lesions are asymptomatic or mildly itchy.

The most common conditions that mimic the morphology and/or distribution of confluent and reticulated papillomatosis are:

Acanthosis nigricans, which is associated with obesity and insulin resistance, but pigmentation is not associated with peripheral reticulation.

Pityriasis versicolor, which has positive microscopy and clears with antifungal treatment.

How is confluent and reticulated papillomatosis diagnosed?

Davis et al have proposed a set of diagnostic criteria:

Clinical findings are scaly brown macules and patches, at least part of which appear reticulated and papillomatous.

The rash affects the upper trunk and neck.

Microscopy and culture of scales are negative for fungus.

The rash does not respond to antifungal treatment.

It has an excellent response to minocycline.

Skin biopsy may be indicated to exclude other diagnoses.

What is the treatment for confluent and reticulated papillomatosis?

Confluent and reticulated papillomatosis usually clears with a tetracycline (minocycline, doxycycline for 6–12 weeks) or a macrolide antibiotic (azithromycin, clarithromycin, erythromycin for 4–6 weeks). Azithromycin and erythromycin can be prescribed in pregnancy.]

Topical tazarotene (a topical retinoid), tacrolimus and calcipotriol) may be used for localised disease.

Systematic retinoids (isotretinoin and acitretin) are usually reserved for cases refractory to antibiotics and topical agents.

What is the prognosis for confluent and reticulated papillomatosis?

A single course of minocycline or a macrolide antibiotic is reported to lead to remission for up to 2 years in many cases of confluent and reticulated papillomatosis.

Recurrence in up to 15% of cases usually follows non-antibacterial treatment.

Spontaneous resolution has been reported in a few cases but it may take up to 39 months for the eruption to clear up.