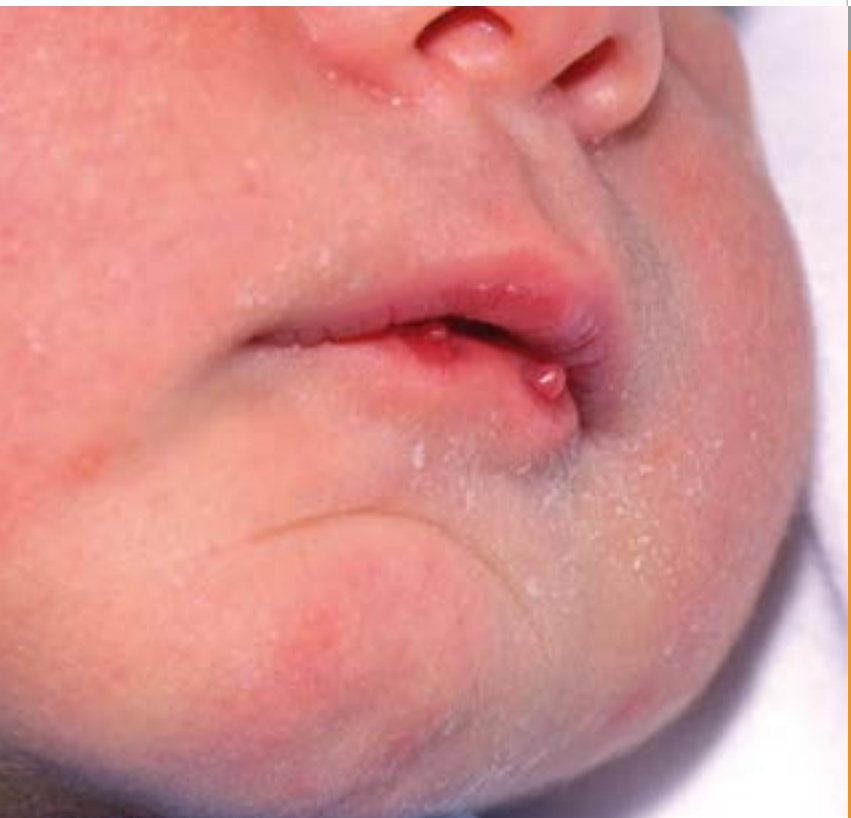
SWISS SOCIETY OF NEONATOLOGY

Van der Woude syndrome



February2009

Gerull R, Fantoni Pfister PC, Cripe C, Huber B, Bucher O, Nelle M, Division of Neonatology, Department of Pediatrics, University Hospital of Bern, Switzerland

This male infant was born to a 30-year-old G1/P1 by vacuum extraction at 39 6/7 weeks of gestation following an uncomplicated pregnancy. Postnatal adaptation was normal. His birth weight was 3400 g (P50) and his length was 51 cm (P25).

On physical examination, two symmetrical lip pits with a diameter of 3 mm were observed on the lower lip (Fig. 1). Each lip pit contained a raised area with a nipple-like appearance in its center (Fig 2). No other anomalies of the facial or oral regions, including cleft lip or cleft palate, were seen. The pits did not interfere with breastfeeding.

Cranial and abdominal ultrasounds did not reveal any additional anomalies. An echocardiography was not performed because neither clinical examination nor pre- and postductal oxygen saturations (>97%) were abnormal.

The findings were felt to be consistent with a diagnosis of Van der Woude syndrome.

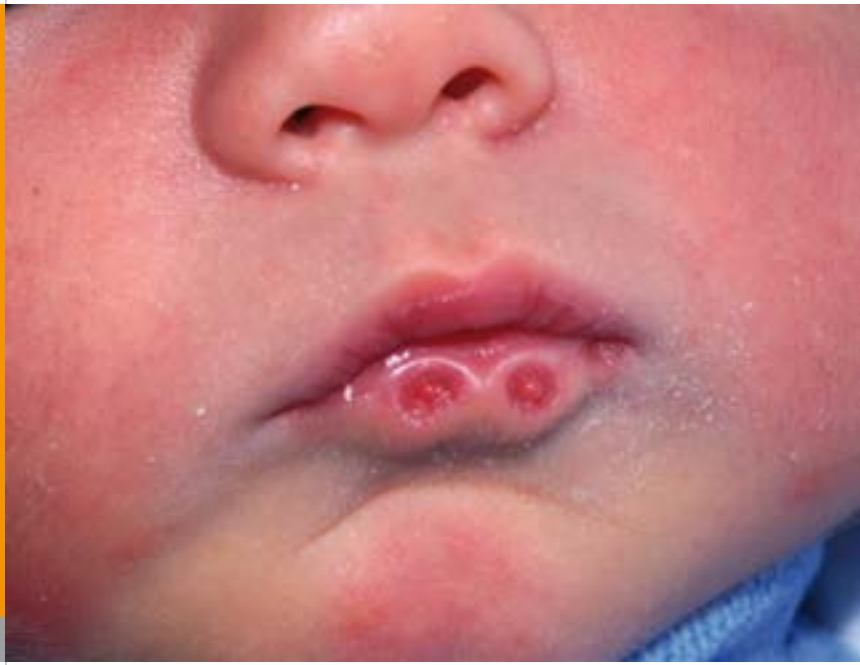


Fig. 1

Symmetrical pits on lower lip.

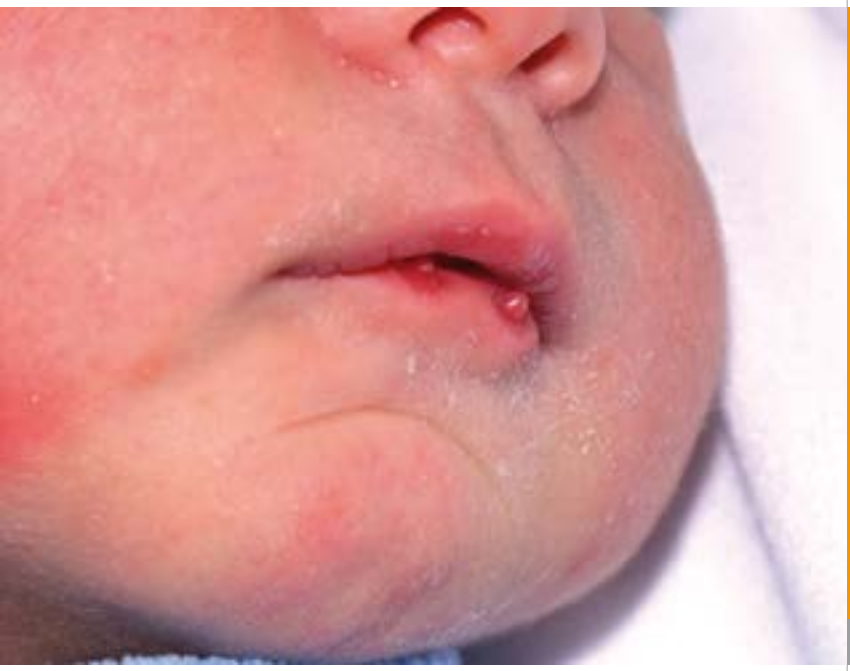


Fig. 2

Lip pits with raised center giving a nipple-like appearance.

DISCUSSION

Van der Woude syndrome (VDWS), which is a rare autosomal dominant developmental disorder characterized by distinctive lip pits, is frequently associated with a cleft lip or cleft palate and infrequently with other facial anomalies. VDWS has a variable expressivity and a high penetrance ranging from 89% to 99%.

A first description of an association of lip pits and a cleft palate was published by Demarquay in 1845 (1). In 1954, van der Woude (2) described five pedigrees with the association of lip pits and a cleft palate and concluded that the syndrome is linked to a single gene.

Kondo et al. linked the syndrome to mutations in the interferon-regulator-factor-6 (IRF6)-gene which is located on the chromosome band 1q32-q41 (3). A second VDWS locus has been mapped to 1p34. Several mutations have been identified, but the exact mechanism of the mutation on craniofacial development is uncertain. De novo mutations occur in 30-50% of the cases.

VDWS has a prevalence of 1:35‘000 to 1:200‘000 without race or sex predilection and accounts for 2% of all cleft lip and cleft palate cases (4). In addition to the distinctive pits of the lower lips and clefts, hypodontia, syngnathia, a narrow high-arched palate or ankyloglossia may also be present. Extraoral manifestations include popliteal webs, congenital heart defects and Hirschsprung‘s disease. The clinical presentation of VDWS varies widely even within affected families.

The pits on the lower lip are the most characteristic feature of VDWS and are seen in 88% of cases and are the only manifestation in 64% of affected individuals (5). They are usually of circular appearance and located symmetrically and bilaterally on the vermillion portion of the lower lip. Single lesions, slits or sulci have also been described. The sinuses penetrate the orbicularis oris muscle down to a depth of 1 to 25 mm and communicate with the underlying minor salivary glands. Lower lip pits can be asymptomatic or present with intermittent or continuous discharge.

The therapy of VDWS includes surgical repair of the cleft lip or cleft palate if present. Excision of sinuses and fistula is performed within the first weeks of life if suction or feeding problems occur. In less affected individuals, lip pits can be surgically removed for discomfort or cosmetic reasons at a later age.

REFERENCES

1. Demarquay JN. Quelques considerations sur le bec-de-lièvre. Gaz Méd 1845;13:52-54

2. Van der Woude A. Fistula labii inferioris congenita and its association with cleft lip and palate. Am J Hum Genet 1954;6:244-256

3. Kondo S, Schutte BC, Richardson RJ, Bjork BC, Knight AS, Watanabe Y, Howard E, de Lima RL, Daack-Hirsch S, Sander A, McDonald-McGinn DM, Zackai EH, Lammer EJ, Aylsworth AS, Ardinger HH, Lidral AC, Pober BR, Moreno L, Arcos-Burgos M, Valencia C, Houdayer C, Bahuau M, Moretti-Ferreira D, Richieri-Costa A, Dixon MJ, Murray JC. Mutations in IRF6 cause Van der Woude and popliteal pterygium syndromes. Nat Genet 2002;32:285-289

4. Rintala AE, Ranta R. Lower lip sinuses: I. Epidemiology, micro-forms and transverse sulci. Br J Plast Surg 1981;34:26-30

5. Janku P, Robinow M, Kelly T, Bralley R, Baynes A, Edgerton MT. The Van der Woude syndrome in a large kindred: variability, penetrance, genetic risks. Am J Med Genet 1980;5:117-123

concept & design by mesch.ch

SUPPORTED BY

NYCOMED

CONTACT

Swiss Society of Neonatology
www.neonet.ch
webmaster@neonet.ch