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Hutchinson's sign and its importance in rhinology*

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SUMMARY

Herpes zoster ophthalmicus usually has a typical appearance. However, if the disease is limited to the nasociliary branch of the trigeminal nerve, the ocular appearance may be confusing. Hutchinson in 1865 first noted that involvement of the external nasal branch of the fifth cranial nerve was associated with an increased incidence of ocular zoster. A case of herpes zoster ophthalmicus is presented that clinically resembled an ocular complication of sinus disease. The presence of a localized vesicular rash at the nasal tip assisted in an early diagnosis. Although this sign is known amongst ophthalmologists, its importance in rhinology is stressed. An anatomical explanation of Hutchinson's sign is given and the treatment of herpes zoster ophthalmicus is briefly discussed.

Key words: herpes zoster ophthalmicus, trigeminal nerve, sinus disease

INTRODUCTION

Herpes zoster ophthalmicus is a common condition, and the appearance is usually typical. The disease may involve the entire area supplied by the ophthalmic nerve, or be limited to one or more of its branches. Hutchinson, in 1865, first noticed that involvement of the nasociliary branch of the ophthalmic nerve was associated with an increased incidence of ocular zoster (Hutchinson, 1865).

A case of herpes zoster ophthalmicus that clinically resembled an orbital complication of ethmoidal or frontal sinusitis is presented. The anatomy of the ophthalmic division of the trigeminal nerve is described, and an anatomical explanation for Hutchinson's sign is given. This useful, but rarely quoted, clinical sign may assist in arriving at an early diagnosis of ocular herpes zoster.

The treatment of herpes zoster ophthalmicus is briefly discussed.

CASE REPORT

A 71-year-old man presented with one week's history of a painful left eye associated with gradual onset of periorbital swelling, localized pain, and deterioration of vision. Examination revealed chemosis, proptosis, complete ophthalmoplegia of the left eye, and a vesicular rash at the tip of the nose (Figure 1). Visual acuity was limited to the ability to count fingers at 30 cm. There was no clinical evidence of rhinosinusitis. Computerized tomography demonstrated periorbital oedema and proptosis, with no evidence of frontal, maxillary or ethmoidal disease. A provisional diagnosis of herpes zoster ophthalmicus was made and the patient was commenced on Acyclovir (800 mg), 5 times per day for 10 days, and a reducing course of prednisolone over a period of 14 days, commencing at 60 mg daily. The diagnosis was later confirmed by a rising titre of zoster virus (16 at day 1, rising to 128 at day 14). The proptosis and periorbital oedema had resolved by four weeks. However, at six months, there had been no improvement in visual acuity, and the patient had also developed post-herpetic neuralgia.

DISCUSSION

Herpes zoster is responsible for approximately 1% of all dermatological conditions, and is caused by the *Varicella zoster* virus (Human Herpes Virus 3). The virus usually affects the thoracic or trigeminal nerves, and is most frequent in the fifth to seventh decade. The ophthalmic division of the trigeminal nerve is involved 20-times more frequently than the remaining two (Ostler and Thygeson, 1976). The anatomy of the ophthalmic nerve (V1) and its branches is summarized schematically in Figure 2, and its cutaneous distribution is illustrated in Figure 3. The nasociliary nerve innervates both the globe and the nose (Pavan-Langston, 1975; Figures 2 and 3). It is the common involvement – by the Varicella virus – of the anterior ethmoidal and ciliary branches of the nasociliary nerve – with the exclusion of the infratrochlear nerve – that provides the anatomical basis for Hutchinson's sign. Herpes zoster ophthalmicus was first described in detail by Hutchinson in 1865, who noted that in cases of nasociliary nerve involvement, ocular involvement was more common. Serious ocular sequelae may occur in up to 85% of such cases (Ostler and Thygeson, 1976). Early recognition of herpes zoster is important if such complications are to be

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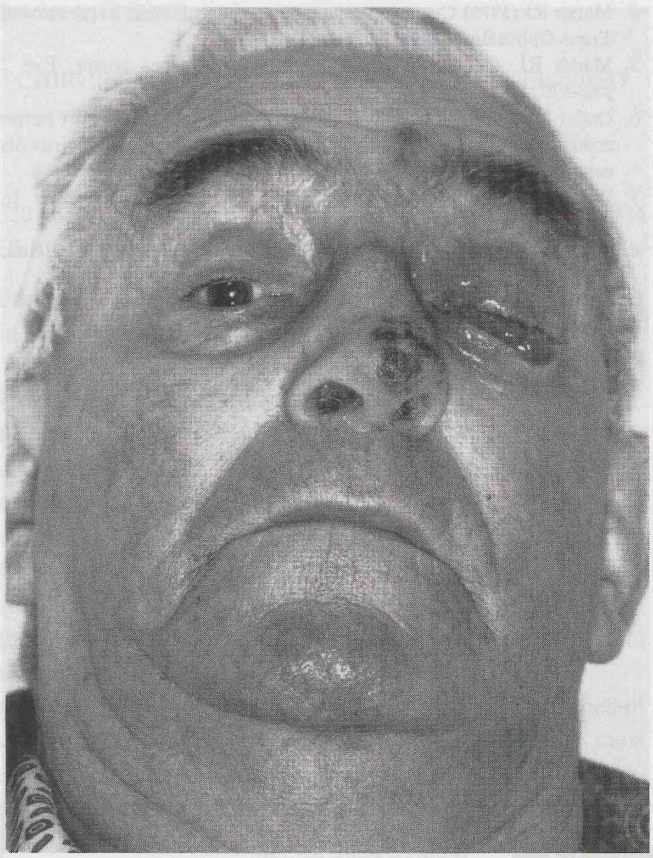

Figure 1. Ocular zoster associated with a vesicular rash at the tip of the nose.

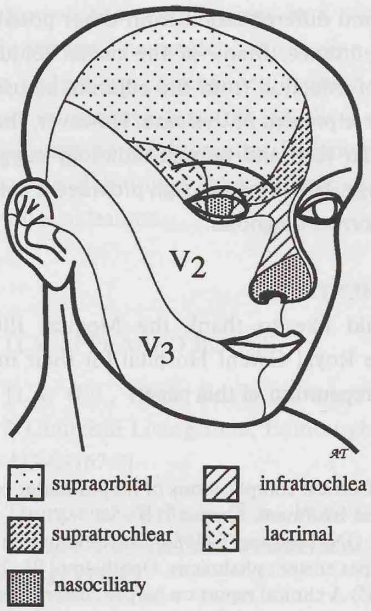

Figure 3. The cutaneous distribution of the branches of the ophthalmic division (V1) of the trigeminal nerve (adapted from Pavan-Langston, 1975).

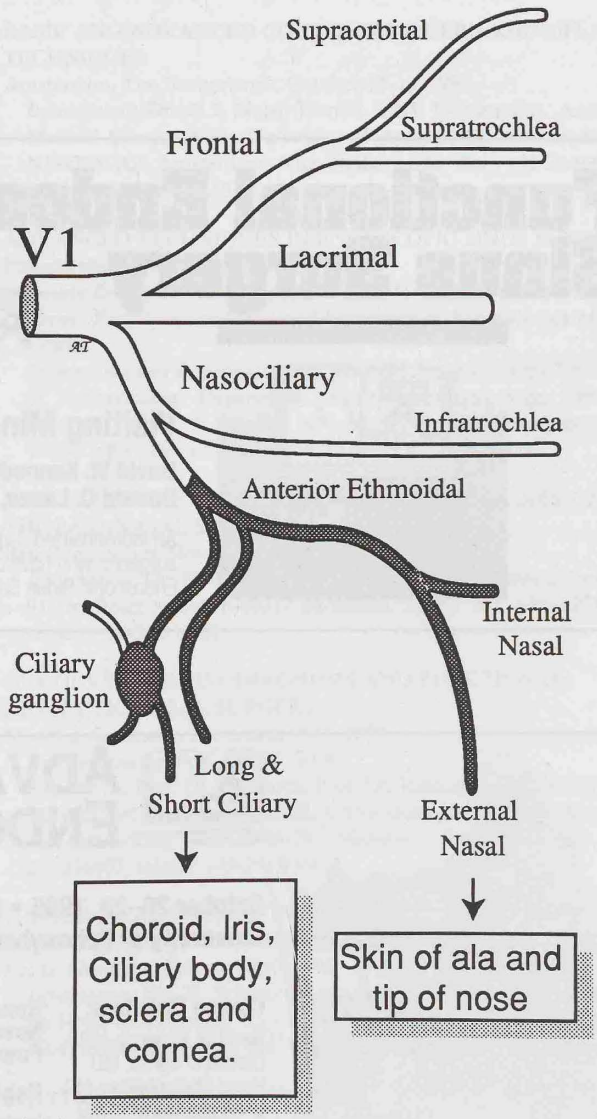

Figure 2. A schematic representation of the branches of the ophthalmic division (V1) of the trigeminal nerve. The shaded area represents the branches affected in Hutchinson's sign. Their destination is indicated.

minimized. The essential feature of this sign is the vesicular rash at the tip of the nose associated with ocular herpes zoster. The remaining branches of the VIth cranial nerve are often simultaneously involved, in which case the diagnosis is usually clear. If the disease is confined to the nasociliary branch, the cutaneous rash may be limited to the nasal tip alone. The management of herpes zoster ophthalmicus is essentially symptomatic in the acute phase, but also aimed at minimizing potentially serious consequences. Acyclovir has been reported as effective in reducing both the acute symptoms and the long-term complications of this condition, but used alone appears to have no effect on the development, duration or severity of post-herpetic neuralgia (Cobo et al., 1986). Some authors, however, feel that further research is necessary before its widespread routine use can be recommended (Marsh and Cooper, 1993).

Systemic corticosteroids have proved useful in reducing the incidence of ocular complications and have been used without the associated theoretical risk of viral dissemination (Scheie, 1970), although their use, once again, remains controversial (Marsh, 1976). Prednisolone is presently recommended in cases of severe ocular zoster, particularly in the presence of worsening proptosis, complete ophthalmoplegia or optic neuritis (Marsh and Cooper, 1993). There is evidence to suggest that its use may also decrease the incidence of post-herpetic neuralgia (Cobo, 1988). Unfortunately, this was not the case in this patient. Orbital complications of sinusitis in the present antibiotic era are relatively rare; however, urgent treatment following their

early recognition and differentiation from other possibilities is of paramount importance. Many of the ocular features seen following spread of infection from the adjacent sinuses to the orbital contents were present in this case. However, the presence of a the vesicular rash and normal radiology suggested an alternative pathology. Hutchinson's sign provided a helpful clue in arriving at the correct diagnosis.

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