

Case 41 A boy with a droopy eyelid



Figure 41.1

Figure 41.1 shows the eyes of a young school boy aged 17 years. Ever since boyhood, from about the age of 6 or so, he had suffered from severe sweating of the hands and, to some extent, of the axillae and feet – the condition of hyperhidrosis. The hand sweating, in particular, had now become an unpleasant nuisance and a social problem. In writing, he found the paper soaked through and the ink ran. His fingers slipped on the keyboard of his computer, so he found it difficult to do his school work. He avoided shaking hands because people did not like to touch him. Small objects, like coins, would slip out of his wet fingers. The axillae were fairly well controlled with antiperspirants and his sweaty feet were not really a problem to him.

On examination, he was found to be a very pleasant, bright young man, otherwise perfectly well. However, the hands, at normal room temperature, were rather cold and very wet. The axillae and feet were damp. He readily agreed to have a bilateral thoracoscopic cervical sympathectomy and was delighted with the result – dry warm hands and cutaneous sweating under control. However, he noticed immediately after his operation (as did his surgeon) the appearance of his right eye.

What do you notice about the right eye and eyelid and what is this condition called?

There is ptosis (drooping) of the right eye and constriction (miosis) of the right pupil – the condition is termed Horner's syndrome.*

What is the anatomical structure which, when damaged, produces this syndrome?

Either the cervical sympathetic chain itself or, as in this case, the first thoracic sympathetic ganglion, which provides the T1 outflow to the chain.

Explain why sympathetic damage to the head produces these anomalies

The pupil is constricted because of paralysis of the dilator pupillae which is supplied by sympathetic fibres. This leaves intact the constrictor pupillae supplied by the oculomotor (third) cranial nerve. The ptosis is produced by paralysis of the sympathetic fibres, which are transmitted in the oculomotor nerve to supply the levator palpebrae superioris – the elevator of the upper lid.

In the initial phase of this injury, there is also vasodilatation and loss of sweating of the face on the same side, but this is usually transient.

In performing an upper thoracic sympathectomy, the surgeon makes every effort to preserve the T1 ganglion, whose fibres supply the head and neck. The aim is to interrupt the outflow from T2 and T3, which supply the upper limb. In this case T1 was inadvertently injured. Today, this operation is usually performed endoscopically using a thoracoscope. This provides brilliant visualization of the anatomy and reduces still further the risk of T1 injury.

*Johann Horner (1831–1886), Professor of ophthalmology, Zurich.

Can you name some other quite common causes of Horner's syndrome?

It may be seen in tumour invasion of the cervical sympathetic chain, for example from a carcinoma in the apex of the lung (a Pancoast tumour), secondary deposits in the cervical lymph nodes or from invasion by a poorly differentiated thyroid carcinoma. A severe injury of the roots of the brachial plexus may tear the cervical chain at its rami communicantes.

What effect will cervical sympathectomy have on the patient's feet?

There will be a compensatory increase in sweating in the feet. The patient should be warned of this prior to surgery.