Missed Diagnosis

Post-traumatic external nasal neuralgia – an often missed cause of facial pain?

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Summary: Pain about the bridge of the nose is often a diagnostic dilemma. There is an important recognizable subgroup who may, as a consequence of involvement of the external nasal nerve in nasal injury, exhibit neuralgic pain after a latent interval. Temporary relief by anaesthesia can be achieved and cure is possible by division of the anterior ethmoidal nerve. This rare cause of facial pain is presented using two illustrative cases.

Introduction

Among patients with persistent pain over the nasal bridge, there is an important subgroup with external nasal neuralgia of traumatic origin. This condition has not been hitherto described but can be recognized readily and treated effectively.

Diagnosis of facial pain rests first and foremost on a full and detailed history, as physical signs are often unremarkable if present at all. Neuralgic pain is confined to the distribution of the affected nerve. The promotion of symptoms by stimulation of the nerve and their abolition after application of local anaesthetic are diagnostic features.¹

Case reports

Case 1

A woman presented with a persistent dull ache about the nasal bridge radiating to the frontal region, which she had endured for 13 of her 48 years. Her pain was accentuated by any direct pressure about the nasal bridge. These symptoms had developed gradually some months following an assault that badly bruised her nose.

There was some persistent left sided nasal obstruction with hyposmia but neither surgery to enhance the airway nor prolonged use of nasal steroids relieved her pain. Multiple investigations including computed tomographic (CT) scanning

were performed which all proved normal. A second opinion was sought and a trial of lignocaine infiltration to the external nasal nerve gave temporary relief.

A bilateral anterior ethmoid nerve section was performed with immediate symptomatic relief that remains sustained 4 years later with but minimal sensory impairment.

Case 2

A woman, 52 years of age, presented with a history of pain present on either side of the nasal bridge that had started some weeks after she had been head butted 2 years before. Her pain was mainly left sided with radiation above the supraorbital ridge. Examination was unremarkable and extensive investigation including electroencephalogram and CT scan were normal.

There were no neurological signs and no loss of sensation over the nasal skin. Lignocaine infiltration about the external nasal nerves produced temporary relief. Bilateral anterior ethmoid neurectomy gave prompt and still sustained (3 years later) relief of pain. The initial slight sensory impairment induced by operation is not now apparent.

Discussion

Although nasal injuries are extremely common the external nasal nerve is seldom traumatized. After supplying the skin of the nasal ala, apex and vestibule the external nasal nerve continues lateral to the upper lateral nasal cartilage to turn medially and deep to the nasal bone (Figure 1). At this point

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Figure 1 The course of the external nasal nerve seen in parasagittal section. ENN = external nasal nerve; NB = nasal bone; NC = nasal cartilage; INN = internal nasal nerve; AEN = anterior ethmoid nerve.

the nerve is vulnerable to traumatic shearing movements between the mobile cartilage and the fixed bone. The persistent neuralgic pain that can result is simply relieved by section of the parent anterior ethmoidal nerve² (Figure 2).

Such an injury may involve the external nasal nerve in local fibrosis or neuroma formation. This may well account for the latent period of several weeks or months that occurred in both these cases between provocative injury and onset of symptoms. Discrete tenderness over the nerve at the osseo-cartilaginous junction of the nasal pyramid indicates an irritable focus in the nerve which can be confirmed by local anaesthetic infiltration.

As these patients' protracted suffering met neither adequate diagnosis nor effective treatment, the presence of some psychological overlay was not surprising. This cleared quickly after symptomatic relief was secured by operation.

Treatment requires exclusion of nasal disease and correction of any intra-nasal factors giving pressure on medial branches of anterior ethmoid nerves over the anterior part of the middle turbinate. This 'anterior ethmoidal syndrome' is

Figure 2 The branches of the right ophthalmic nerve viewed from above. Abbreviations - see Figure 1 and: ITN = infratrochlear nerve; STN = supratrochlear nerve; SON = supraorbital nerve; NN = nasociliary nerve; FN = frontal nerve; LN = lacrimal nerve; ON = ophthalmic nerve; CP = cribriform plate.

recognized when probing this region reproduces the symptoms and local cocaine infiltration relieves them.^{3,4}

Removal of prosthetic pressure from spectacles on the subcutaneous branches of the external nasal nerve is often helpful. Persistent pain warrants proximal section of the anterior ethmoidal nerve. Any neurectomy will induce a stump neuroma which may become symptomatic if vulnerable to pressure against bone. In this instance it is better to section the parent nerve not only because it is more easily found but also because any resultant neuroma is well away from provocative pressure. Through a limited medial orbital incision the anterior ethmoidal neurovascular bundle is easily defined, electro-cauterized via an insulated pair of crocodile forceps, then divided. This is a rapid procedure using a small incision with minimal cosmetic disadvantage.

References

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