14 Non-infective Inflammatory Conditions

Nasal and Paranasal Polyposis

Swelling and polyposis of the mucosa of the nose and paranasal sinuses are produced in many different pathological conditions, both benign and malignant. Histological investigation is essential for accurate diagnosis.

By far the commonest form of nasal polyposis is a chronic oedematous swelling of the mucosa and submucosa, which leads to nasal obstruction.

Pathogenesis

The pathogenesis of nasal polyposis is poorly understood. It is likely that the majority of polyps are related to hypersensitivity, mediated through mast cells. There is no obvious allergen in these cases. Non-allergic asthma is a common accompanying condition, as is aspirin hypersensitivity (Drake-Lee 1982). In children less than 10 years of age polyposis is sometimes related to cystic fibrosis of the pancreas (mucoviscidosis) (Schwachman et al. 1962).

Eggston and Wolff (1947) considered that nasal polyps were produced by periphlebitis and perilymphangitis leading to oedema of the lamina propria. On the basis of appearances suggesting newly formed gland ducts in the stroma of polyps, Tös and Mogensen (1977) felt that there must be rupture of epithelium and formation of granulation tissue following inflammation. The lining becomes re-epithelialized by respiratory epithelium and the stroma oedematous. Newly formed mucous glands develop. There has been no confirmation of these findings by other authors.

Gross Appearances (Fig. 14.1)

The majority of nasal polyps present a soft, lobular, grey to pink translucent appearance measuring up to 3 cm in diameter. The cut surface is moist and pale pink. A stalk, produced by pulling on the mucosa during removal, is sometimes present. The antrochoanal polyp, a separate entity, is usually found in children. It originates from the mucosa of the maxillary sinus, extrudes through the ostium into the nasal cavity and, because of its size, bulges backwards through the posterior choana into the nasopharynx.

Microscopic Appearances (Fig. 14.1)

There is marked oedema of connective tissue with prominent lymphatic dilatation. In some cases the stroma resembles myxoid tissue with markedly oedematous fibrillar deposition and fibrocytes. The respiratory epithelium reveals intense goblet cell hyperplasia and mucinous glands are similarly active. The epithelial basement membrane is markedly thickened. Eosinophils infiltrate the subepithelial tissue in variable, frequently large numbers. There is also a pronounced plasma cell
Fig. 14.1a–d. Nasal polyps. a Gross appearance of group of polyps removed from one side of nose, showing smooth, shiny, somewhat lobulated surface. The stalk on the lowermost polyp is probably produced by pulling during removal. b There is severe goblet cell hyperplasia. The basement membrane is thickened. Numerous eosinophils and plasma cells are present in the lamina propria. HE, × 400. c Basement membrane thickening, eosinophil and plasma cell infiltration around duct of mucous gland in nasal polyp. HE, × 71. d Case of cystic fibrosis. There is dilatation of most of the ducts by eosinophilic secretion and a chronic inflammatory infiltration. This is not diagnostic for nasal polyps in cystic fibrosis, since such an appearance may also sometimes be found in nasal polyps unassociated with that disease. HE, × 81

Infiltrate. Collections of large histiocytic cells in the deeper part of the polyp are common. The stroma may appear fibrous. This feature, in conjunction with the presence of numerous blood vessels, may arouse suspicion of a possible diagnosis of juvenile angiofibroma. Irritation of the surface of the polyp frequently gives rise to squamous metaplasia of the lining epithelium. In some nasal polyps there is a mucous glandular hyperplasia suggesting an adenomatous neoplasm. Rarely, benign metaplastic cartilage or bone has been identified in otherwise benign inflammatory polyps.