The prevention of pitfalls in FESS begins not at the time of operation, but as soon as the patient presents himself to the endoscopic surgeon. Such measures can be conveniently divided into three distinct phases: pre-operative, intra-operative and post-operative.

Pre-operative Measures

There are three pre-operative measures which should be taken: History taking, nasal endoscopy and a CT scan.

As in most doctor-patient interactions, history taking is the most important aspect of patient diagnosis. A positive history of allergies, aspirin sensitivity, bleeding tendencies and recent infections must be inquired into prior to operation. Patients with specific or generalised atopy do less well following FESS, and must be warned accordingly. Also, indications for surgery in this group must be based on anatomical and/or radiological assessment of the ostio-meatal complex, and not purely on symptoms. Medical therapy must be rigorously pursued before a decision to operate is taken. Aspirin sensitivity was first described by Widal in 1922, but has been in the limelight only in recent years. It presents as part of a triad of symptoms, along with nasal polyposis and asthma. Prolonged bleeding times may also be noted. The underlying aetiology is thought to be a primary connective tissue disorder in the sensitive individual. Here again results are poorer, and no false hopes should be raised pre-operatively. Operating in a recently infected patient invites trouble, as generalised congestion and mucosal oedema cause bleeding into the narrow surgical confines, thus making the procedure difficult and hazardous.

A few salient points must be mentioned for out-patient nasal endoscopy. The 4 mm 0° and 30° endoscopes are advocated routinely. The first and second passes could be performed without anaesthetising the nose, but it is recommended that examination of the sphen-ethmoidal recess and sphenoid ostium be performed with local anaesthesia such as 4% cocaine in 1 : 1000 adrenaline.

We have had cases where the patient mentions some form of "nose operation" – endoscopy reveals an inferior meatal antrostomy, at times stenosed, or associated with residual antral disease, hence a routine examination of the inferior meatus is important. Similarly, close examination may reveal an apparent polyp to be a bifid anterior end of the middle turbinate; a medially rotated uncinate process may mimic a polyp in the middle meatus.

CT scanning should not be performed in the presence of recent rhinitis and/or sinusitis, as a false picture of mucosal oedema may be presented. Also, constant dialogue between the surgeon and radiologist is necessary, especially in regard to uncinate process position, the relation of the ethmoid roof to the nasal cavity and dehiscences of the lamina papyracea, optic nerve or internal carotid artery. So also the extent of disease should be assessed.

Intra-operative Measures

Local versus general anaesthetic and ease of access are intra-operative factors which should be considered.

Local anaesthetic is ideal, as it allows the patient to return home after a relatively safe, bloodless procedure. The patient inevitably alerts the surgeon if he approaches the lamina papyracea and/or skull base; however, the surgeon must
anaesthetise the nose thoroughly, or the patient becomes unco-operative and the procedure tedious. Associated sepal deviations and/or external nasal deformities require a general anaesthetic.

The initial incision should be deep, and should follow the groove between the lateral wall of the nose and the caudal border of the uncinate process. A superficial incision will only lead to mucosal bleeding, and a proper infundibulotomy will not be achieved. The incision must extend up to the lower part of the uncinate process so as to facilitate a middle meatal antrostomy at a later stage in the operation. Similarly the upper part of the uncinate process must be removed properly, or else one would encounter difficulty in accessing frontal recess.

After the bulla has been removed, the lamina papyracea is identified and the forceps always kept parallel to its plane. Next comes the ground lamella, which should be identified and breached medially to gain access to the posterior cells. At this stage, the skull base must be identified by its thickness, and then skeletonised anteriorly by removing the remaining ethmoidal cell stumps. The ethmoid cavity has now been created; fine touches to its contours provides a well exteriorised cavity.

A middle meatal antrostomy often brings the surgeon up against the most diseased part of the nasal cavity, with polyps and discharge (in close proximity to the orbit) frequently distorting the view. Identification of the ostial site is easier when the lower part of the uncinate process has been completely excised. The level of the antrostomy is usually at the lower margin of the middle turbinate, just above the upper margin of the inferior turbinate. The upwards-cutting forceps must be directed downwards and laterally. For beginners, the combined approach (CAMMA) may be used. Caution must be exercised when advancing posteriorly, as branches of the spheno-palatine artery may be encountered. Post-operative stenosis is prevented by turning a mucosal flap over the antrostomy edge.

The fronto-nasal recess is left until last. A 70° endoscope is used to clear this area. As the ethmoidectomy has already been done at this stage, the almost unavoidable trickle of blood does not hamper the surgeon in his procedure. If oozing is excessive at any stage of the technique, the cavity may be packed with 4% cocaine-adrenaline strips, and the opposite side may be operated on.

Fig. 12.1a–c. Proper nasal endoscopy often reveals abnormalities which appear different at first sight. a The uncinate process (UP) could well be mistaken for a polyp. b Closer examination shows this to be a medially rotated uncinate process. c Even closer examination reveals a congested and medially rotated uncinate process. S, septum; LW, lateral wall; MT, middle turbinate.