招待講演

平成 16 年 9 月 25 日（土）
11:10〜12:10
京王プラザホテル
第 1 会場「エミネンスホール」

司会：森山 寛（慈 大）

「FESS: Complications, Safety and Failures」

Kevin J. Kane
( Nose and Sinus Clinic,
Royal Victorian Eye and Ear Hospital,
Melbourne, Australia )
The advent of nasal endoscopes has given Rhinologic Surgeons an unprecedented view of the nasal cavity, together with the intricate anatomy of the ethmoidal air cell system and its associated major sinuses. However nasal endoscopes and faulty surgical technique can also disorientate the surgeon with the possibility of severe complications such as intracranial penetration or damage to the adjacent orbit. When Endoscopic Sinus Surgery was introduced to the English-speaking world in 1984, dire prognostications of such eventual complications was predicted. To avoid such problems the importance of pre-operative examination of the nose with a rigid telescope is stressed so that a surgical plan of treatment developed. In this preliminary examination, it is important to decide if a full Septoplasty is required, for instance, when there is dislocation of the caudal end of the septum from the columella, or if a mere endoscopic removal of a septal spur is required.

CT scanning of the sinuses is also paramount. The scans should include coronal, axial and para-sagittal views with magnified images of the ostiomeatal unit. It is also important to have a mobile x-ray stand to fix the scan on to so that they are close to the operating table and available for the surgeon to constantly peruse during the course of the surgery.

The anatomy of the lateral nasal wall is best learned by attending courses with associated cadaveric dissection or performing similar dissection in a hospital mortuary.

Sophisticated radiological imaging such as Computerised Navigational Surgery and MRI scanning is also important. MR images are inferior to CT scans because of poor bone definition. However MR scans are indicated in patients with dehiscences of the skull base, particularly after surgery when it is not clear if a mucocele or a meningocele is present. Comparing T1 and T2 images will be a guide, as well as the use of Flair, a variant of T2 weighted sequences, where the pulse nulls free fluid and thus CSF is suppressed. Further indications are erosion of the lateral wall of the sphenoid. An MR combined with an MRA which delineates the carotid artery will be useful.

The major complication continues to be adhesions, both between the middle turbinate and lateral nasal wall, as well as within the ethmoid cavity itself. Various synthetic substances which inhibit the formation of scar tissue, such as the hyluronadase ester marketed as Merogel, have been used with success.

Operative haemorrhage tends to occur in gross infection, smoking and gross nasal polyposis, thus highlighting the importance of pre-operative medications particularly with antibiotics and steroids to adequately prepare the nose.

Intra-orbital haemorrhage from surgical transection of the anterior ethmoid artery at the base of the skull still occurs and highlights the necessity of pre-operative viewing of the CT scans, especially in the coronal plane. Two millimetre scan cuts through the ostiomeatal unit often show the anterior ethmoidal artery but, if its bony canal is missed in these cuts, a ‘dimple’ on the medial orbital wall will give the surgeon an indication of the level of the artery from the skull base.
Failures
FESS failures are related to retained anatomy, mucosal disease and systemic disease factors. Emphasis in this paper will be placed on recirculation of mucous between adjacent openings after surgery as a relatively common cause of persistent sinusitis after surgery.

It is particularly prone to occur if intranasal surgery is performed without the use of angled telescopes. In this situation the natural ostium is often out of direct vision and an antrostomy is created in the posterior fontanelle, separated from the natural ostium, thus setting the scene for recirculation of mucous between the two openings with resultant persistent infection.

The phenomenon also occurs commonly between a middle meatal opening and an inferior meatal antrostomy, usually created at a prior operation, if the inferior turbinate has been significantly excised. The presence of an intact inferior turbinate usually acts as a deflecting baffle to prevent the recirculation process. Recirculation may also be relevant for persistent sinusitis in the sphenoid and frontal sinuses.

Safety
The issue of safety and complications from FESS has been confounded by the lack of any definition of what is meant by the term. Some surgeons for instance perform the surgery with a head-light without using angled telescopes. This makes the comparing of outcomes and complication rates meaningless.

It is proposed that a suitable definition of FESS is:

FESS is a surgical technique described by the Messerklinger school of nasal endoscopists which utilises angled telescopes to clear inflammatory disease within the ethmoid sinus complex, particularly the ethmoidal infundibulum and frontal recess, with the object of establishing aeration and drainage of the major sinuses. Emphasis is placed on tissue conservation where possible with preservation of the nasal turbinates.

The complication rates from major centres indicate that the severe complication rate of the procedure is less than 1% and compares more than favourably with the traditional techniques of intranasal surgery.

The author’s own complications and difficulties that he has experienced in the last 20 years will be outlined in a personal series of over 5000 cases.