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33.7 Endoscopic surgery beyond the nose

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Endoscopic surgery of the nose and paranasal sinuses has enormous development in the last two decades. It has nearly completely replaced the traditional external surgical approaches to treat rhinological diseases including sinusitis and polyposis. With the advances of nasal endoscopes endoscope irrigation system, videocamera, powered drills and image guided surgical navigation system, the scope of transnasal endoscopic surgery has reached beyond the nose and sinuses to include the orbit and anterior skull base region.

The medial and inferior orbital wall and optic canal are assessable through the endoscopic transnasal approach. Endoscopic orbital decompression and dacryocystostomy can be done with better results than the traditional transfacial external approach. Our results show that transnasal orbital decompression can achieve 78% complete eyelid closure, median of 4 mm (range 3 -7mm) proptosis reduction and 82% visual acuity improvement for patients with thyrotoxic orbitopathy. It has particular advantage of better exposure and assess to the posterior aspect of the orbital wall and optic canal through the posterior ethmoid and sphenoid sinuses in which the traditional transfacial approach will be very difficult. The anterior skull base lesion can also be resected through the endoscopic cranionasal approach. En-block resection of anterior skull base tumor is now possible. It can avoid the transfacial scar and deformity resulting from craniofacial resection.

The endoscopic transnasal surgery has advantages of avoiding facial scar, less post-operative discomfort and better results.

34.1 Preliminary report on the rate of apoptosis in human first and third trimester placentae

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Introduction: Apoptosis is a physiological kind of cell death by which an organ maintains its homeostasis. Apoptosis has recently been demonstrated in human placenta. Using Haematoxylin & Eosin stain (H&E) under 1000x magnification, the median rates were 0.07% and 0.14% in the first and third trimester. The present study aims to establish the rates of apoptosis in all three trimesters in normal pregnancy. As a preliminary report, only the data for the first and third trimesters will be presented.

Methodology: Placentae were collected from first trimester terminations and from uncomplicated term pregnancies with spontaneous delivery of appropriate-for-gestational age infants. All first trimester placental tissues were fixed in formalin, and embedded in paraffin wax. From each term placenta, four blocks were randomly taken and similarly processed with one block finally selected. Sections were cut, mounted on slides and stained in duplicate with H&E and terminal deoxynucleotidyl transferase-mediated deoxyuridine triphosphate nick end labeling methods (TUNEL, Boehringer Mannheim). The slides were examined with 9 and 4 fields sampled randomly for first and third trimester placentae respectively under 400x magnification. This included 2000 to 4000 nuclei for each slide.

Results: 14 samples were analyzed in each trimester. With the TUNEL method, the apoptotic rates in median [inter-quartile ranges] were 1.82% [1.52%-2.12%] and 0.70% [0.50%-1.07%] for first and third trimester placentae respectively (Mann-Whitney U-test $p < 0.05$). With H&E stain, the apoptotic rates were 1.22% [1.08%-1.32%] for first trimester and 0.50% [0.46%-0.60%] for third trimester samples, which showed the same trend and a good correlation with the rates obtained with TUNEL (Spearman correlation $p < 0.05$). In all specimens, the apoptotic nuclei were in clusters of 5 to 10 and associated with fibrin type fibrinoid deposits at the syncytiotrophoblast layer.

Conclusion: These figures not only were higher than those reported previously but also showed the opposite trend with a higher rate in the first trimester, and confirmed the previous observation on the association between apoptotic nucleus and fibrinoid deposits, where there is re-epithelialization of the denuded villous surface. We postulate that apoptosis is involved in the remodeling of villi during trophoblastic invasion and growth. This is seen most actively in the first compared to the third trimester and hence the higher apoptotic rate.