

11 Abstracts from the 4th Bilateral Scientific Meeting

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嬰幼兒微創外科手術新進展 Minimally Invasive Surgery in Newborns and Infants

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The advent of minimally invasive surgery (MIS) has resulted in major changes in the surgical approach to many paediatric surgical conditions. Today, successful application of the minimally invasive surgical techniques is not limited to simple minor operations in older children, but can be well extended to major and complicated surgical reconstructions even in young infants and newborns. Many studies have demonstrated that laparoscopic surgery resulted in less stress and better-preserved immune function than open surgery. Prompted by these encouraging results in adults, the Division of Paediatric Surgery, Chinese University of Hong Kong has been actively developing minimally invasive surgery in infants and young children since the early 90's, and has been recognized internationally as a leading centre in this field. Simple operations like appendectomy, pyloromyotomy, orchidopexy, fundoplication, splenectomy, nephrectomy and heminephrectomy, etc. are now regularly performed using the endoscopic approach. In addition, we have also pioneered many innovative neonatal and paediatric minimally invasive surgical procedures. These include sophisticated and technically demanding procedures in newborn or young infants like total colonic endorectal pullthrough, retroperitoneoscopic dismembered pyeloplasty, video-assisted thoracoscopic ligation of tracheoesophageal fistula and oesophageal anastomosis for oesophageal atresia, laparoscopic excision of choledochal cysts with hepaticojejunostomy, repair for duodenal and small bowel atresia, and even 95% subtotal pancreatectomy for nesidioblastosis. Currently, over 80% of surgical procedures that were traditionally performed by open method have been safely and effectively replaced by MIS techniques in our Division.

One main technical difficulty for MIS in newborns and young infants is accurate control and positioning of the endoscope by the assistant in a very small confined

space, to provide an optimal endoscopic view that is synchronized with the surgeon's movements. The introduction of the voice-controlled computer-assisted endoscopic system solves this problem by providing robotic precision and stability in maintaining an optimally positioned and well synchronized endoscopic view that is unaffected by time. A robotic arm can have many degrees-of-freedom that closely mimics the form and function of the human arm and indeed has revolutionized endoscopic surgery by delivering an absolutely stable endoscopic vision that is responsive to voice-control by the surgeon, allowing great precision and dexterity, while totally free of tremor and fatigue, during long and complex procedures. This has enabled the paediatric surgeons to perform extremely complex and sophisticated endoscopic reconstructive procedures using the MIS techniques in a small newborn infant, and even in the fetus.

胰膽系統疾病內鏡治療

Endoscopic Treatment of Biliary – Pancreatic Disease

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胰膽系統疾病內鏡下治療是近二十年來臨床醫學領中最令人振奮和欽佩的技術之一，內鏡下逆行胰膽造影 (Endoscopic Retrograde Cholangiopancreatography, ERCP) 及內鏡下十二指腸乳頭切開術 (Endoscopic sphincterotomy, EST)，已成為胰膽疾病診斷和治療的基本技術之一；1974年德國 Classen 及日本醫師 Kawai 首次報導 EST 成功後，內鏡治療技術的介入使 ERCP 的診斷和治療 (therapeutic ERCP) 合而為一，為胰膽疾病的診斷和治療開闢了一個新的領域，改變了傳統內、外科診斷和治療的思想。

胰膽疾病的內鏡診斷和治療是通過側視性十二指腸鏡，採用系統的 ERCP 技術，對十二指腸乳頭及副乳頭進行系統探查而完成的，十二指腸乳頭是胰腺管及膽總管在腸腔內開口的解剖標誌，由於其在腸腔內的可見性和特殊的解剖學特點，使得在內鏡下對膽道和胰腺管的治療操作成為可能。治療性 ERCP 大多首先進行乳頭切開，乳頭的切開使得許多治療過程成為可能，例如結石去除、碎石、引

流及擴張等。乳頭切開也有利於通過乳頭插入直徑更細的子內鏡(膽道鏡)、微型超聲波探頭、插入組織活檢鉗或細胞刷、直視下或在 X 線監視下取材進行病理學診斷及膽管胰腺的內鏡下超聲波檢查,使內鏡方法成為對其他診斷性影像學方法最重要的補充。

相對於傳統的內科治療和外科手術,內鏡治療法提供了一個新的選擇機會,根據疾病性質的不同可標本兼治。手術前用內鏡方法可以緩解症狀,使手術治療得以充分準備。內鏡方法是無損傷性或微小損傷性的,對於避免手術後併發症如膽道狹窄、膽漏形成是理想的選擇,對於膽囊切除術後及膽道手術後的復發性或殘留性膽總管結石,內鏡方法則是首選治療方法,通過內鏡的方法也可避免高危或急診手術,隨著內鏡及輔件的發展可以採用內鏡法治療的胰膽疾病很多可分為:

1. 良惡性膽胰管梗阻性疾病內鏡下膽胰管引流術(ENBD、ERBD、胰管內引流術等)、良性狹窄擴張術、EST;
2. 胰膽管內異物(結石、蛔蟲等)取出術;
3. 膽瘻(ENBD、ERBD);
4. 胰腺假性囊腫、膿腫引流術(與胰管相通可採用胰管內引流術、不與胰管相通時可採用超聲內鏡引導下穿刺引流術)等;
5. 膽道疾病術後有“T”管引流時,可採用膽道鏡下取石、狹窄擴張等。

腹腔鏡 TME 與低位、超低位、結腸 - 肛管吻合術治療低位直腸癌的臨床應用研究

Total or Major Mesorectal Excision and Low/Ultralow/Colo-anal Anastomoses with Laparoscopic Approach in the Treatment of Low Rectal Cancer

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目的: 探索腹腔鏡全直腸系膜切除(TME), 低位、超低位、結腸 - 肛管吻合術治療下段直腸癌的可行性。

方法: 按 TME 原則, 用雙釘合技術(DST), 在腹腔鏡下對 26 例下段直腸癌患者實施 TME、DST 低位 / 超低位吻合術。

結果: 26 例患者手術順利, 無中轉開腹, 手術時間 115 分鐘 - 320 分鐘, 平均 155 分鐘; 術中出血 5-80 ml, 平均 20 ml; 術後 1-2 天恢復胃腸功能並下床活動, 住院時間 5-14 天, 平均 8 天。術後疼痛劑應用 9 例, 術中及術後無併發症發生。

結論: 腹腔鏡 TME/MCME、低位 / 超低位 / 結 - 肛吻合術治療下段直腸癌, 創傷小、保肛率高、術後疼痛輕、恢復快, 是一極具應用前景的微創新技術。

Objective: To assess the feasibility and adequacy of a totally laparoscopic total mesorectal excision (TME) and low / ultralow / colo-anal anastomoses for low rectal cancer.

Methods: Excision of the mesorectum and low / ultralow site anastomoses were performed laparoscopically on 26 patients with low rectal cancer based on the concept of TME and double stapling technique (DST).

Results: 26 TME/MCME and DST were successfully completed totally laparoscopically, and no one was converted to open procedures. The operation time was 155 min (115-320). Operative blood loss was 20ml (5-80). The time of bowel function returned and the time to resume post-operatively diet was 1-2 days after the operation. 9 patients had postoperative analgesic requirement. Average hospital stay was 8 days (5-14) and there were no intraoperative and postoperative complications in all 26 patients.

Conclusions: Totally laparoscopic excision of the mesorectum and low / ultralow / colo-anal anastomoses for low rectal cancer is a perspective minimally invasive technique, which is feasible, safe, effective and has dramatically higher rates of sphincter preservation with decreased postoperative pain, rapid recovery.

CT 介導立體定向內窺鏡下顱咽管瘤的外科治療

Surgical Treatment for Cystic Craniopharyngiomas by CT-guided Stereotactic Neuroendoscopic Resection

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目的: 探索神經外科以手術治療為主的綜合治療方案對於視丘下部附近區域的囊性顱咽管瘤的臨床療效。

方法: 選擇 16 例顱咽管瘤, 其中 12 例為囊性, 4 例以囊性為主, 男 10 例, 女 5 例, 腫瘤均位於三腦室前份, 採用德國 Brain Scan 立體定向手術計劃系統處理頭部 CT 薄層掃描數據, 以顱咽管瘤囊中心為靶點, 計算穿刺點的三維坐標、內窺鏡進入角度及深度; 使用美國 Clarus 腦內窺鏡系統在局麻下(其中 2 例兒童因不能配合採用氣管插管全麻)以額部入路行 CT 介導立體定向內窺鏡下切除部分囊壁或腫瘤實質, 排除囊液減壓後囊內置入 Ommaya 管, 術後經反復抽吸囊液, 並反復注入小劑量博來霉素 30-40 次。

結果: 以臨床症狀、Ommaya 管抽吸囊液的形狀和 LDH 測定值、CT 或 MRI 隨訪情況以及手術前後激素水平的變化作為衡量療效的標準, 16 例經治療後視力、視野障礙明顯好轉, 7 例有顱內壓增高者術後緩解, 12 例術後

復查內分泌激素水平明顯改善，14 例在手術基礎上行囊內化療後隨訪 2~3 年，症狀持續改善。CT 復查顯示瘤腔縮小，無手術死亡，術後視丘下部功能紊亂反應輕。結論：該療法安全、簡便、有效，是採用微侵襲神經外科手段治療顱咽管瘤的有效方法，有較好的臨床應用價值。

Objective: To investigate the clinical efficacy of surgical treatment for cystic craniopharyngiomas by CT-guided stereotactic neuroendoscopic resection with the comprehensive intratumoral chemotherapy.

Methods: Ten male cases and six female cases of craniopharyngiomas were brought into the treatment group with the 12 cystic cases and 4 partial cystic cases which located in the anterior part of the third ventricle. All the 16 cases of craniopharyngiomas were resected by CT-guided stereotactic neuroendoscope with the accurate surgical plan system of Brain Scan (Germany) and the Clarus (America) neuroendoscopic neuro-navigation system. Transfrontal approach and local anaesthesia (except 2 children cases using general anaesthesia for the noncooperation) were selected during the operation. Ommaya tubes were implanted in the subgalea aponeurotica and intratumoral chemotherapy with bleomycin were given postoperatively.

Results: Postoperative clinical manifestations, characteristics and the LDH measurement of drainage fluids from the Ommaya tube, neuroradiological countercheck results (including CT and MRI) and the endocrine hormones outcomes were included as the criteria for the clinical efficacy evaluation. The clinical manifestations improved promptly after the evacuation of cysts in all patients; 7 cases of intracranial hypertension gained the relieve; 12 cases of endocrine disorders gained their normal levels postoperatively. No death or severe complications were observed. Follow-up materials ranged from two to three years illustrated that the tumor cysts gradually regressed and disappeared with the improvement of clinical manifestations after the comprehensive chemotherapy postoperatively.

Conclusions: The surgical treatment of CT-guided stereotactic neuroendoscopic resection and the postoperative comprehensive intratumoral chemotherapy with bleomycin for cystic or partial cystic craniopharyngiomas is safe, effective and convenient which would be the best way for the treatment of craniopharyngiomas with its simple procedure and great application value.

神經內窺鏡在神經外科的角色 Neuroendoscopy: The Role in Neurosurgery

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在上世紀初，內窺鏡已用來做腦積水的診斷及治療。首次有記錄的使用是在 1990 年芝加哥泌尿科醫生 L'Espinasse 用膀胱鏡來熱溶兩位有腦積水的嬰兒的脈絡叢。因為器材原始、高病發率和死亡率，Dandy 的報告令人沮喪。為了簡化及消除腦室引流系統，人們再次點燃對神經內窺鏡的興趣。最近光學技術的突破性發展使內窺鏡在腦外科手術中的應用再次成為可能。診治的指證已清楚界定。神經內窺鏡已成為一種微侵犯步驟。

在 1996 至 2001 年的五年中，我們進行了十八次第三腦室和水管造口術，沒有一人死亡，祇有兩位有輕度術中腦室出血，另外兩病人有短暫的視覺和言語障礙。丘腦合併腦室出血的情況就大不滿意，因為兩側側腦室都充滿溢血，腦室腫瘤活檢也沒有併發死亡。另外四宗手術是經鼻蝶腦下垂體腺瘤切除。當經驗累積，我們希望提高技術以更好地照顧病人。

Endoscopic neurosurgery began at the turn of the last century as an effort to diagnose and treat hydrocephalus. The first recorded endoscopic neurosurgical procedure was in 1910 when L'Espinasse, a urologist in Chicago used a cystoscope to fulgurate the choroid plexus in two hydrocephalus infants. Dandy reported discouraging results and abandoned because of the primitive nature of the instruments, the high surgical mortality and morbidity rates. In an effort to simplify or eliminate ventricular shunt systems, the current resurrection of interest in neuroendoscopy was re-kindled. Recent technical breakthroughs in optical design have made possible the development of endoscopic procedures. Diagnostic as well as therapeutic indications are now well defined and neuroendoscopy has become one of the minimally invasive procedures. During a period of 5 years from 1996 to 2001, eighteen 3rd ventriculo-cisternostomy followed by four aqueductoplasties were performed with no mortality. Intraoperative minor bleeding occurred in two patients which stopped spontaneously with minimal morbidity. Transient visual disturbance and mutism was observed in 2 patients which lasted only a few days. Results of thalamic haemorrhage with extension into the ventricles was not satisfactory especially when both horns

of the lateral ventricles are filled with blood. Biopsy of tumours were unremarkable and there was no procedural related mortality. Four transnasal, transphenoidotomy was performed for pituitary adenoma and other lesions. As we gain more experience, we hope to improve our techniques and give good quality care to our patients.

鼻內窺鏡下鼻腔蝶竇徑路垂體腫瘤切除術

Hypophysectomy Transnasal-sphenoidal Approach with Endoscope

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目的: 報告在鼻內窺鏡下經蝶垂體腫瘤切除術的術式改進方法及麻醉方法。

方法: 用鼻竇內窺鏡經鼻腔蝶竇入路切除垂體腫瘤 42 例, 其中局麻加基礎麻醉 37 例, 並在開放蝶竇、增大手術操作空間方面作了改進。

結果: 術中出血少, 手術順利, 42 例均無併發症發生。術後隨訪 6~35 月, 術者均有不同程度的症狀改善。

結論: 鼻內窺鏡經鼻腔蝶竇徑路作垂體腫瘤手術, 切除犁骨翼及蝶嘴以擴大術野, 選擇合適病例用此改進手術方式可在局麻下順利完成手術。

Objective: To report the anesthetization and surgical method of transnasal-sphenoidal endoscopic approach in hypophysectomy.

Methods: Forty-two cases with pituitary tumor underwent transnasal-sphenoidal endoscopic surgery and 37 out of 42 accepted local anesthesia and sedation.

Results: No complications had occurred, the operations went successfully with less blood loss. Postoperative endoscopic follow-up period was performed at 6 to 35 months. The symptoms were improved in all patients.

Conclusion: Our results show that transnasal-sphenoidal endoscopic approach under local anesthesia in treatment of pituitary tumor seems to be a safe simple and valuable way.

植層支架在腹部主動脈血管瘤之應用 Stent for Abdominal Aortic Aneurysm for Chinese Population

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Aortic Stent graft was first successfully deployed for infrarenal abdominal aortic aneurysm (AAA) by Parodi in 1991, subsequently, there is considerable improvement in the design of stent grafts and these are manufactured

by a number of companies. Though it has been extensively studied, this is still room for improvement in its design. Unfortunately, even a large number of stent grafts are implanted annually and this procedure is increasing popular among the surgeons, vascular interventionists and even the patients, there is no randomized controlled trial for its efficacy and the cost effectiveness issue is little studied. We may only know its effectiveness by looking at the registries, such as EUROSTAR and RETA.

Most aortic stent grafts have a bifurcated design, which mimic the natural blood flow. There are variations in the use of graft material and stent material, in anchorage methods, in longitudinal strength, in body length and in methods of limb extension. Some device could not stand the test of time and has failed.

Another design is the aortouniliac device. It is simpler to deploy and is an alternative in unfavorable anatomy. However, the blood supply of both lower limbs and the pelvic organs depends on one outflow iliac artery, and is considered unnatural by many. The femoro-femoral bypass graft is also prone to obstruction and there is a higher probability of postoperative infection, which can have drastic consequence.

The straight tube for the aortic aneurysm has gone out of favor, as there is a high chance of retrograde leakage.

Aortic stent graft is now used for many patients with AAA, who are unfit for conventional surgery. However, one still has to consider the general status of the patient, especially for those with ASA class III and IV. Even the procedure is successful, these patients still have a high 30-day mortality of up to 10% and one has to balance this with the risk of AAA rupture.

With the present design, stent graft is contraindicated if the neck and the iliac anatomy are unfavorable. A tortuous neck, a neck with calcified thrombus and a neck with a posterior pouch may cause proximal endograft leakage.

The common iliac arteries are commonly involved by the aneurysm, and it may not be possible to anchor the device in the common iliac artery, it is the conventional practice to preserve at least one internal iliac artery. Occlusion of both internal iliac arteries may cause large bowel ischemia, buttock claudication and even neurological damage.

In Chinese population of the southeastern region, the aortic neck tends to be small. Previously, it is difficult to get a commercial device suitable for such a small neck;

with more products available, this is no longer a problem. We also have the impression that the incidence of a short common iliac artery is higher, and anchorage in the common iliac artery may thus be difficult. Another major problem is the small size of the external iliac artery and femoral artery, especially in old Chinese female. The diameter may be less than 6 or 7 mm, which is the usual smallest diameter of the delivery system in the stent graft. Forceful insertion will cause arterial rupture, which may produce a large retroperitoneal hematoma, and it can go unnoticed till it is too late.

Aortic stent graft is still at the stage of development and improvement. With meticulous care, we can provide an alternative minimal invasive method to replace an ultramajor surgery in the old population.

上腔靜脈阻塞綜合症的血管內支架治療

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目的：探討血管內支架治療上腔靜脈阻塞綜合症的技術和臨床應用效果。

方法：9例上腔靜脈綜合症患者，原發病灶均由病理組織學診斷為惡性腫瘤。行右股靜脈穿刺，在造影像上測量狹窄長度及正常上腔靜脈直徑，選擇適當支架，原則上支架直徑應超過正常上腔靜脈直徑10%，上下端應超過狹窄段1-2cm。成功後用球囊擴張支架。術後繼續治療原發疾病並抗凝治療，透視或胸片觀察支架位置，多普勒了解上腔靜脈通暢情況。

結果：支架置入後行DSA見造影劑回流通暢，上腔靜脈管徑接近正常，側支循環明顯減少。上腔靜脈壓由開通前平均26.4cmH₂O降至15.7cmH₂O。經統計學處理有顯著性差異(P<0.01)。相關臨床症狀、體徵消失或緩解。頭頸部、上肢、胸壁腫脹2天內消退，尿量增多，胸壁淺靜脈怒張消失。

結論：支架術治療上腔靜脈綜合症微創、簡單、有效，值得推廣。

介入放射在處理肝臟移植併發症的應用 Interventional Radiology in the Management of Liver Transplant Problems

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Background: Orthotopic liver transplantation is an accepted mode of treatment for patients with end-stage liver disease. However, postoperative complications contribute significantly to the morbidity and mortality of

the patients, and most transplant recipients may experience problems at some time. As hepatic transplantation becomes more common, radiologists have been challenged with the treatment of complications using interventional radiological techniques. The study is carried out to evaluate the efficacy of interventional radiological management of liver transplant complications.

Methods: Over a 7 1/2-year period (January 1994 to July 2001), 25 patients (20 male and 5 female) with complications after liver transplantation were treated by interventional radiological techniques. The mean age of these patients was 31.5 years (range 1 to 61 years). Fifteen patients with biliary-enteric stenosis were managed by percutaneous biliary drainage and balloon dilation, 2 patients with biliary-enteric stenosis by percutaneous biliary drainage, 4 patients with hepatic vein/inferior vena cava stenosis by percutaneous transluminal angioplasty, 2 patients with portal vein stenosis by percutaneous transhepatic balloon dilatation, 1 patient with ruptured hepatic artery pseudoaneurysm by transcatheter arterial embolization, and 1 patient with hepatic artery thrombosis by transcatheter thrombolysis. The clinical outcome after intervention was monitored, and all patients were followed up at 1 to 2 months intervals.

Results: The interventional radiological procedures were successful in 20 patients (success defined as clinical and biochemical improvement without further surgical intervention). For 2 patients with biliary-enteric stenosis balloon dilatation could not be performed, and 2 patients with inferior vena cava stenosis required further surgical intervention. The patient with ruptured hepatic artery pseudoaneurysm died despite successful coil embolization.

Conclusion: Interventional radiological management is an effective therapeutic option for liver transplant complications, particularly for biliary and vascular problems. More invasive surgical intervention can be avoided in many circumstances, and should be reserved as back up procedures.

脈衝 YAG 激光淚道成形術

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目的：為了進一步總結淚道激光成形術，本文總結了一年做的 YAG 激光手術 77 眼。

材料和方法：病人經術前確定有淚道堵塞，全身情況許可者，用 YAG 激光機對淚道的堵塞部位進行擊通。並置線或置管。術後進性隨訪。凡有隨訪記錄者作為總結。

結果：77 眼隨訪半年至一年，50 眼症狀消失，佔

64.94%，17 眼有流淚，佔 28.57%。

結論：YAG 淚道激光應對單純性的小管，淚總管有效。對早期的部分的淚囊炎有效，YAG 能解決該部分常規手術效果不佳的病人，YAG 淚道激光手術應掌握好手術指針。

To sum up the operation of YAG laser in lacrimal tubercle operation of last year in our hospital, the total of 71 patients, 77 eyes. The obstruction of lacrimal tubers may be single or multiple. After operation, we observe these patients for several months to one year. The results are: 50 eyes are successful after laser operation in 77 patients eyes, about 64.94%. 17 eyes still tearing, about 22.01%. Conclusion is that the YAG lacrimal laser operation may be successful in those who have single obstruction of lacrimal gland tubers, but not so for those have a lot of purulent obstruction.

內窺鏡外科在口腔頰面外科內的角色 The Role of Endoscopic Surgery in Oral & Maxillofacial Surgery

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早於七零年代初，因著微型內固定術在口腔頰面外科的發展，那些保守的頰面手術進路方法，卻為徹底性手術外露矯正被取而代。高面頰骨折全面性修復便是一個最佳的例子；頰骨得以精確地根據解剖位置而定位。大手術顯露便成為了近代頰面外科的主流。

口腔頰面外科內的微創手術意念，可追索到八零年代，顛頰關節內窺鏡術，引起各國學者的廣泛興趣並發展，開拓了頰面內窺鏡的技術應用。隨著儀器的改善及臨床經驗的累積，這手術成為對顛頰關節集診斷與治療為一體的處理方法，更取代了傳統的關節外露手術的位置。在近期，利用內窺鏡協助之區域性的口腔頰面外科手術，有著新的突

破，對一些傳統大手術顯露進路的技術作出了新的挑戰，以微創的原則，更而得到相同的術後效果及減低手術所引發的後遺症。

本文著重總結一些現今流行的口腔頰面窺鏡手術的應用，透過本人有限的經驗，試圖討論內窺鏡術的角色，優點及其限制，最後以幾項臨床應用作為分享，例子如顛頰關節內窺鏡術、內窺鏡協助頰面骨折內固定及微型窺鏡涎石摘取術等。

With the development of mini-fixation application in oral and maxillofacial surgery in the early 70's, the paradigm of conservative access was shifting to a more radical surgical exposure. Rigid Internal Fixation of high level facio-maxillary fractures was one of the most outstanding examples. The facial skeleton could therefore be precisely reduced anatomically. In oral and maxillofacial surgery (OMFS), the spirit of minimal invasive therapy was initiated by the evolving role of Temporomandibular Joint (TMJ) Arthroscopy in early 80's. With the development of instrument and techniques, TMJ arthroscopy has now redefined its position in the management of TMJ disorders by overwhelmingly taking over of the conventional open joint surgery. It became the most popular and acknowledged endoscopic procedure in our field. In recent years, with the endoscope complementing sophisticated regional surgical access, the paradigm seems to have shifted back to a less aggressive approach in some category of operation without jeopardising the outcome. This presentation will give a current development of endoscopic surgery in OMFS. Comparison between conventional techniques and endoscopic procedures will be focused on instrument set up, surgical access, advantage vs disadvantage and its limitation. Local experience in TMJ arthroscopy, endoscopic assisted rigid internal fixation of facial fractures and microendoscopy application in salivary gland will further be elaborated.