出國報告(出國類別:短期進修)

美國耶魯大學附設醫院眼整形重建專科短期進修回國報告

服務機關：國防醫學院三軍總醫院

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派赴國家：美國

報告日期：98 年 9 月11 日

出國時間：97 年 9 月26 日 至 98 年 9 月6 日

摘要:

職奉命派至美國耶魯大學附設醫學眼整形重建專科短期進修，自民國 97 年 9 月 26 日至 98 年 9 月 6 日止，爲期一年。

赴美期間主要跟隨附設醫院眼整形重建專科主任 Dr. Bernardino。學習各式外眼部外傷處理，新式人工眼球植入手術，甲狀腺眼疾診斷與處理及如何設計並從事眼科相關臨床研究。

由於該校是美國歷史悠久的醫學中心，擁有十分豐富的醫療相關資料及期刊。同時，在病患服務量上也是該州首屈一指的最大醫學中心。因此在學習過程中職也利用該特點撰寫了數篇醫療論文投與國外醫學期刊 : 包括 Review of Ophthalmology，Annals of Plastic Surgery，及 American Journal of Ophthalmology 等期刊，共計兩篇已獲接受，另一篇審核中，詳見附件。

進修報告目次及頁碼

壹. 進修目的

眼科學可細分多項相關次專科，而眼整形重建專科主要涵蓋各式眼部外傷後處理，外傷後重建，人工義眼植入等相關領域。本部因原擔任眼整形重建專科相關醫師已因另有規劃而退伍。因此在本人奉命出國進修前正面臨斷層危機。另外，三軍總醫院健保醫學中心位階，且肩負軍醫體系之領導核心任務；故無論民眾或國軍袍澤發生複雜眼整型重建問題，本院眼整型重建科勢必擔任照顧治療之最後防線。基於上述理由，本人奉命赴美習得最先進之眼部重建整型手術，期望能爲本部醫療服務提供更新的技術，同時也期能將該技術傳承於後繼。

此外，本次進修指導醫師 Dr. Bernardino 師承美國堪稱最大的眼耳鼻喉科醫學中心(Massachusetts Eye and Ear infirmary)。該醫師除對各式外眼部整形重建手術擅長外，其對甲狀腺相關眼疾之臨床疾病診斷與處理也有相當研究。由於國內對此疾病重症能處理者仍屬少數。因此，此次進修另一目的也是想習得最新處理技術，期能藉此領先其他國內醫學中心眼科，進而爲三軍總醫院眼科推升另一層級的服務與研究。

貳.進修過程

職於 97 年 2 月份取得美國耶魯大學附設醫院眼科部眼整形重建科主任同意後於 97 年 9 月 26 日起出發，開始爲期一年的學習生活。

美國耶魯大學附設醫院是屬於全美十大頂尖醫學中心之一;而該院亦是康乃狄克州最大的醫學中心。目前眼科部主任 Dr. James Tsai 是台灣裔的一位醫師，自 2006 年起接管眼科後即更加擴編眼科的規模，同年亦將本次受訓的指導醫師 Dr. Bernardino 聘入該院眼科。Dr. Bernardino 來至全美最大規模的麻州眼耳鼻喉醫院(Massachusetts Eye and Ear Infirmary)，同時在學術表現上也具有相當出色的臨床研究文章發表。因此，同時獲得耶魯大學附設醫院眼科副教授的學術聘約。Dr. Bernardino，除對一般眼外傷整形重建手術擅長外，亦對甲狀腺眼疾之診斷與治療有相當獨到的見解。

自 97 年 9 月 30 日報到後，職始追隨 Dr. Bernardino 日常學術及臨床活動。每日早上七點，眼科都有部內主治醫師根據其專長給予科內人員學術專題演講。另外，每周四下午跟周五早上的 Grand Round 都會邀請其他醫院眼科醫師到部內做學術演講及參與病例討論。從這些活動中，職卻也溫習跟獲得不少眼科方面的新知與進展。Dr. Bernardino 每周有 5 個時段門診，及合計有 2 個整天的門診及開刀房手術時段。另外，我們在每周三下午固定有辦公室的討論時段。在這個時間上，Dr. Bernardino 指導職如何設計與從事一個臨床研究。遇到有疑問的部分，Dr. Bernardino 也都會要求職去搜尋相關學術論文研讀，並約定於下次時段討論研讀內容。因此，在這過程中，職從閱讀了上百篇的學術論文上獲得的不少新知。

另外，Dr. Bernardino 也指導職從零開始，設計一個簡易的臨床研究。在其指導下，職也從事一個關於下眼瞼運動的臨床研究。經耶魯人體試驗委員會通過於 98 年 3 月份起開始於門診時間收集符合適應症的病患，並經同意進行試驗。該完整的試驗計畫全部由職撰寫，經 Dr. Bernardino 修改後送審通過。此項計畫

在職離開後仍由該院住院醫師協助進行中。由於該院規定雖無法取得試驗相關數據，但由於歷經此次訓練對於日後自行從事臨床試驗計畫的設計與計畫書的撰寫上，已獲得完整的訓練。

在年度的學習過程中，共計習得 30 多種不同的手術方式。主要可以區分爲眼瞼手術(Eyelid surgery)、眼球摘除合併人工義眼植入術(Enucleation with implantation)、及甲狀腺眼眶減壓手術(Orbital bony decompression)。以下將習得的手術方式介紹如下:

一. 眼瞼手術(Eyelid Surgery)

在眼科領域中，需要進行眼瞼手術的常見適應症包括外傷，眼瞼下垂，眼瞼內翻，外翻，眼瞼腫瘤，眼睫毛倒插…。

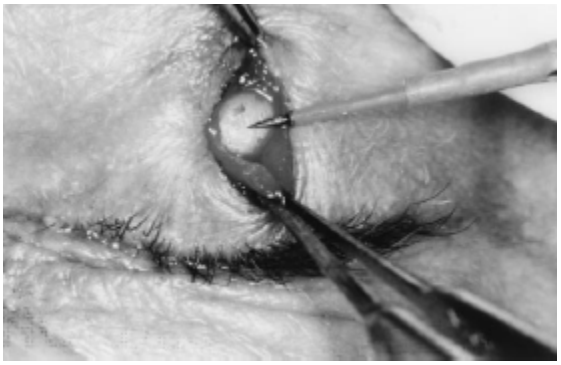
眼瞼手術的方式有超過 10 種以上。整年度觀看到的眼瞼手術案例更超過五百例。包過眼瞼下垂矯正術，眼瞼內翻外翻矯正術，眼瞼重建術…。其中最常見也是 Dr. Bernardino 和一般醫師略有不同的是採用小切口的眼瞼下垂矯正術(Small incision ptosis repair)。

手術適應症:

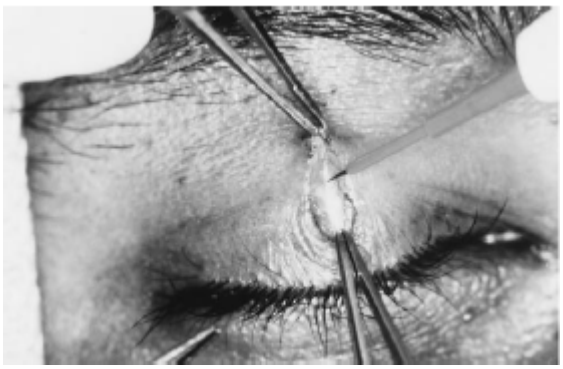
因爲外傷，老化，或先天性提眼肌萎縮所造成之眼瞼下垂而影響視力者。

手術步驟:

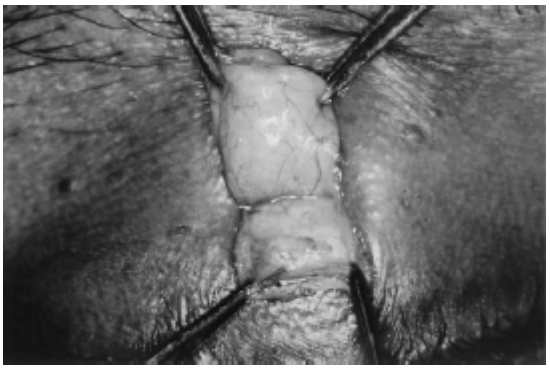
1. 先使用畫筆將患部上眼瞼眼紋(lid crease)高度描繪出，若眼紋不明顯者，則採用瞼板高度做參考。
2. 使用 2%含 1:100,000 Epinephrine 的 Lidocaine 在皮下注射作局部麻醉，約 0.5-1.0cc 量。
3. 利用 15 號圓刀片在步驟 1 中範圍僅切開約 1cm 大小的傷口，並往下直接分離皮膚與瞼板。



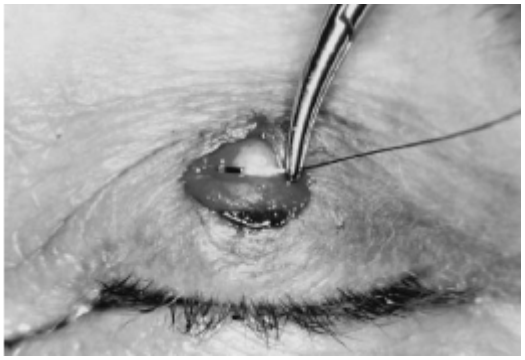
4. 在切口上方將皮膚與眼瞼膈(septum)和提眼瞼肌筋膜(levator aponeurosis)分離。

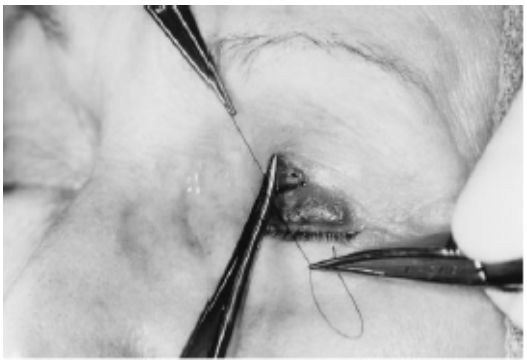


5. 將提眼瞼肌筋膜剝離眼瞼板並與下方的 Muller 肌分離。



6. 利用 6-0 黑絲線吃部分瞼板(partial thickness)後向上全層穿過提眼瞼肌筋膜。





7. 調整需要眼瞼高度後將黑絲線縫合，皮膚則利用 6-0 尼龍線縫合。

手術優點:

此項手術與國內普遍進行的手術方式的切口約 1/3 大。利用此方式不但傷口小，手術時間縮短，病患恢復快；更重要的是有臨床的文章指出此方式的手術效果跟傳統方式相近。因此，此法是目前多所美國醫學中心眼整形重建專科多採用的方式。

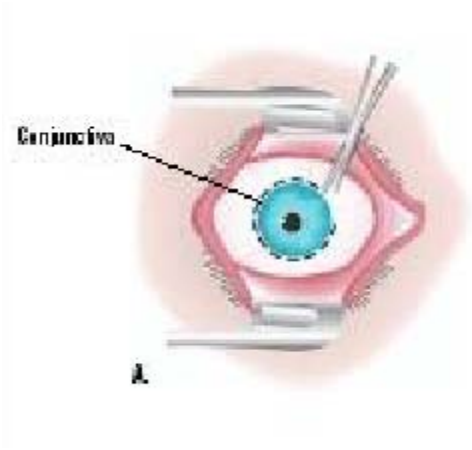
二.眼球摘除合併人工義眼植入術(Enuculeation with prothesis implantation)

手術適應症:

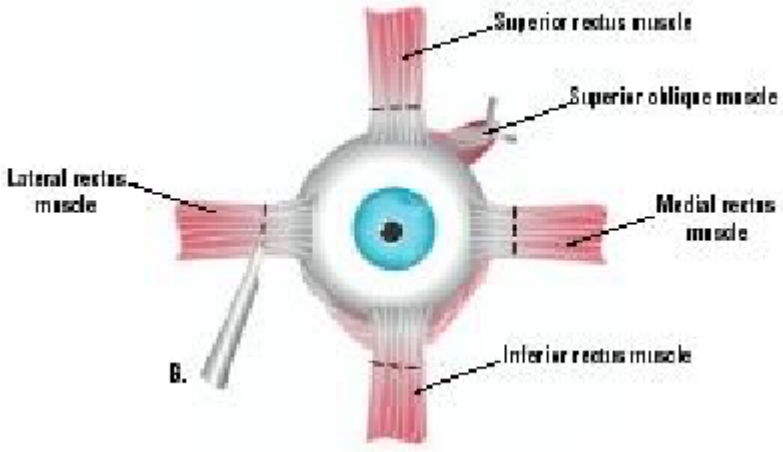
因爲眼球外傷，嚴重眼內感染無法用內科方式處理，頑固性眼球疼痛且無視力者，先天性眼球萎縮等。

手術步驟:

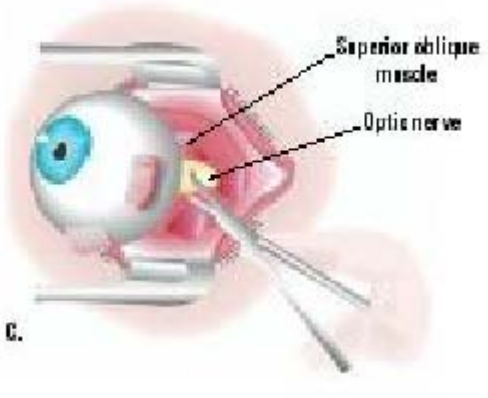
1. 先用 2%含 1:100,000 Epinephrine 的 Lidocaine 在結膜下注射，等待約 3 分鐘後，利用 Wescott 剪刀將結膜與角膜緣分離並將結膜盡量與後方眼球剝離。



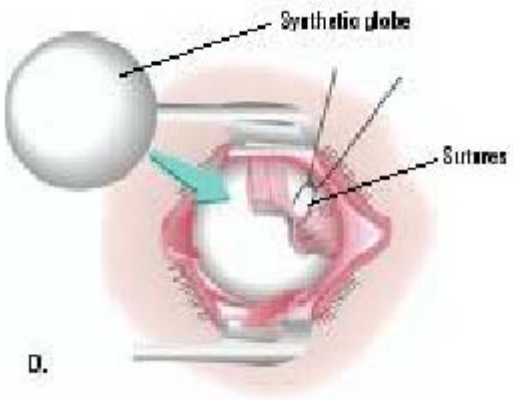
2. 將四條主要的眼外肌(上下內外直肌)剝離原來位置，並利用 6-OVicryl 線在肌肉原附著處作固定方便爾後的步驟。



3．將眼上與下斜肌及視神經剪斷後將眼球取出。



4．將適當大小的 Mephor 材質義眼浸泡含抗生素藥水的溶液後植入眼眶。



5．將眼內外上下直肌利用肌肉附著部位的 6-O Vicryl 線縫上 Mephor 義眼球。

6．利用 5-O Vicryl 線縫合結膜，放入眼眶隔片(conformer)後手術完成。

手術優點:國內目前使用的植入物多屬於人工珊瑚義眼，然因爲此材質表面不平滑，容易造成植入物外漏的併發症。Dr. Bernardino 採用新式的 Mephor 材質的人工義眼，不但改進了這項缺點，同時可將眼外肌縫合至人工義眼上，大大了改善眼球的活動性與對稱性；兼具了功能與外觀的手術方式。

甲狀腺眼疾在西方人的盛行率高於東方人。另外，Dr. Bernardino 由於長年對於此疾病之診斷與治療有很深刻的著墨。因此，在每次門診中至少都有 1-2 位不等程度的甲狀腺眼疾病患求診。因此，在整年度門診中，觀看到有大約 300 名以上的病例。其中約有 50 多例需要接受單眼或雙眼的眼眶減壓手術。目前國內所使用的減壓手術多屬於將眼眶內因爲甲狀腺機能亢進而增生的脂肪結締組織去除。目前台大醫院眼科的做法即屬於此。然而使用此法效果在科學論文中記述效果有限。另一種甲狀腺眼疾的減壓方式，屬於眼眶骨減壓術。主要是利用人爲的方式將眼眶底部，內壁或外壁去除部分骨頭，使得這些增生組織自然下陷。因而使眼眶壓力大爲減少，進而達到降低眼內壓力，保護視神經的目的。

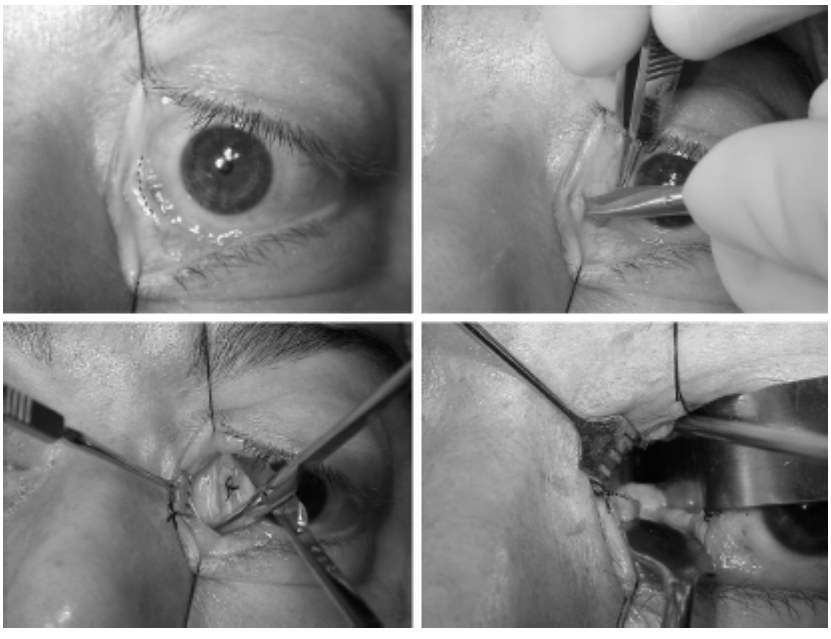
三.眼眶減壓手術(Orbital bony decompression)

手術適應症:

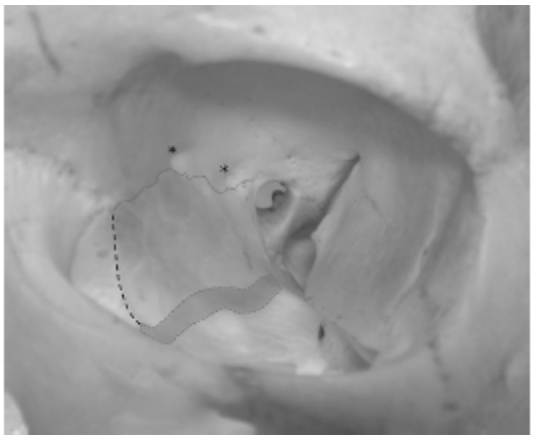
主要是因爲甲狀腺凸眼症造成眼眶壓力增大，使的眼瞼閉合不全，眼球疼痛，壓力性視神經病變。

手術步驟:

1. 利用 6-0 黑絲線作上下眼瞼的牽引性縫合(traction suture)，將內肉阜外漏，再利用 Steven 剪刀作鈍狀分離(blunt dissection)，使眼眶骨內壁漏出。



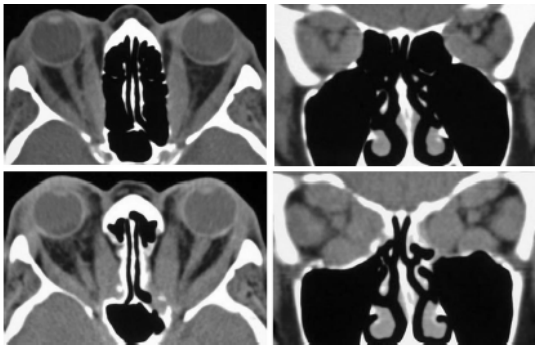
2. 利用 freer 造成人爲性骨折後利用骨剪(Rongeur)將眼眶內壁骨咬掉，後往下直接分離到下壁。
3. 爲了在去除內壁及下壁後眼球不會內陷，圖中標示的區域骨頭要保留。



4. 在比對患眼與正常眼壓力及眼球外凸程度後決定去除骨頭的量。完成後將肉阜用 6-0 可吸收線縫合。

手術優點:

Dr. Bernardino 的手術方式和一般醫師不盡相同。主要採用眼眶底部及內壁同時的眼眶減壓手術。而其切口亦從眼結膜內側的肉阜(caruncle)進入。不但效果好，而且傷口癒合後完全見不到疤痕。因此，在功能性及外觀性上有著兩全其美的方式。下方的圖例就是職在該眼科見到的實際病例的電腦斷層圖，上方兩張是術前的，下方兩張是術後的。很明顯的見到眼眶內軟組織都陷入篩竇(ethemoid sinus)及上額竇(maxillary sinus)的空腔內。因此眼眶壓力大爲宣洩。



叁.進修心得

眼整形重建專科在國內眼科學上並非一個十分熱門或是多人從事的次分科。然而在國外則是一個相當大的分科。簡單來說，除了眼內的部分，其餘的眼外組織，眼皮，眼眶，眼部腫瘤等都是眼整形重建專科的領域。在美國一個完整的眼整形重建科臨床研究醫師訓練(Clinical fellowship)約需要兩年的時間。第一年是眼瞼手術，第二年則是眼眶手術訓練。其中還包含眼科病理學的讀片訓練。因此可謂是相當嚴謹的訓練。國內目前缺乏完整的眼整形重建科臨床研究醫師訓練。即使連號稱最大的台大醫院跟榮總的訓練上亦有所不足。因此，職有幸能跟到一位經美國最大眼耳鼻喉科醫院訓練出來的醫師。所學到的可謂收穫良多。

此次出國最大的心得就是可以見到美國這個先進國家的醫學教育的訓練確實相當紮實。從一個住院醫師的養成開始，就開始落實循序漸進的教育方式。每個階段都有要完成的手術量。在耶魯大學附設醫院眼科到完訓時要完成白內障手術 50 例以上，眼瞼手術 30 例以上，青光眼手術 10 例以上等…。國內礙於醫療過失保險未能落實，加上醫療糾紛逐年增多，因此，使後來加入的住院醫師能獨立完成各種手術的機會減少，因此在訓練上便存在著一定的盲點。這是目前職在美國這一年中看到他們跟國內很不一樣的地方。

另外，美國的醫師養成教育很強調研究這一塊。所以大部分的住院醫師都會從事不等規模的臨床或基礎研究計畫。同時，在每年中都有科內的學術活動，要求全部的主治醫師跟住院醫師出席。每位住院醫師要報告年度研究計畫的進展，如有困難也可以在會議中提出。而此項報告跟研究成果也列入住院醫師考績。或許因爲美國住院醫師在臨床照顧病患的負擔上相對於國內許多科別的住院醫師是相對合理。但我想能在住院醫師階段養成做研究的興趣跟能力，我想這應該是國內每家醫院，特別是醫學中心應該努力的目標。

肆.此進修對單位之貢獻

本院眼科自陳喬鴻醫師退伍後，眼整形重建專科則面臨斷層的情形。然此次能有此機會出國進修，學到的許多新式醫學知識與臨床技術不但可以運用在照顧軍方弟兄與民眾在面臨有眼整形重建的需求時能得到最佳的照顧。同時，職更期能將所學教與後進醫師，達到傳承的目的。另外，在甲狀腺眼症的診斷與處理上，原本台大醫院屬於箇中翹楚。希望藉由此次所學，在此疾病的診治上能達到並駕齊驅的效果，豎立三軍總醫院醫學中心的領導地位。

伍.建議事項

近年由於預算所限，本院後起醫師能有機會或國外進修的機會逐年減少。然而爲了能維持一個醫院的永續經營與更新發展。吸收不同來源的醫學新知是個不可或缺的方式。若礙於經費的不足，職認爲可以採用縮短進修時間，但提供更多人可以進修的方式來實行。

三軍總醫院在醫師養成教育上對於臨床研究醫師(clinical fellowship)上並沒有一個很嚴謹的規定。有的科別有此頭銜，但有個科別則無。因此，大多是完成總醫師訓練後直接升等主治醫師(不管是額內或額外)。由於大多數的科別都有次專長的領域，而住院醫師的訓練又是所有次領域都要學習。加上目前由於沒有醫療過失保險的保障。因此，即使完成住院醫師的訓練後，真正能夠成爲獨當一面的主治醫師往往都要歷經多年的磨練。如果，三軍總醫院能夠真正建立跟落實研究醫師的制度，不管提供國內或國外的訓練機會的話，相信對於這些年輕的主治醫師一定可以減少自行摸索的時間。這樣無論是對病人或對醫師本身都是一種保障。此外，藉由不斷地有外來的新知識的匯入，在良性的互動下一定能使本院的醫療服務，醫學研究及醫師的教育上有著更進一步的推動。

陸.附件

附件一:兩篇已獲刊登國際期刊之論文

第一篇:

文章性質:Review Article

文章名稱:Update of Thyroid Eye Disease

期刊名稱:Review of Ophthalmology

第二篇:

文章性質:Letter to the Editor

文章名稱: RE: Kim et al. Versatile Use of Extended Transconjunctival Approach for Orbital Reconstruction. Ann Plast Surg 2009;62:374–380

期刊名稱:Annals of Plastic Surgery

Update on Thyroid Eye Disease

TED is the most common orbital disease and more than one-quarter of cases may be severe.

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THYROID EYE DISEASE, ALSO CALLED THYroid-related immune orbitopathy and Graves' ophthalmopathy/orbitopathy, is an autoimmune disorder, as well as the most common orbital disease, affecting 25 to 50 percent of patients with Graves' disease.[1] As such, it is also one of the more common diseases in which ophthalmologists work in conjunction with other medical professionals (endocrinologists, internal medicine physicians, etc.) to deliver patient care. The clinical signs feature a combination of eyelid retraction, lid lag, proptosis, restrictive extraocular myopathy and optic neuropathy. Clinical symptoms of most patients are usually mild, consisting of ocular irritation with redness and tearing, "stare" due to lid retraction and exophthalmos and periorbital swelling. Nevertheless, approximately 28 percent of TED cases are severe, with restricted motility leading to diplopia, exposure keratopathy and optic neuropathy.[2] In this review, we will highlight some of the recent advances in care for patients with TED.

Epidemiology

A recent epidemiologic study of white American patients with TED from the Mayo Clinic determined an age-adjusted annual incidence of 16 per 100,000 for women and three per 100,000 for men.[3] TED affected women six times more frequently than men (86 percent versus 14 percent of cases, respectively).

Figure 1. A case of severe acute thyroid eye disease—chemosis, proptosis and bilateral compressive optic neuropathy.

Thyroid Dysfunction

George Bartley, MD, indicated that among patients with TED in the incidence cohort, approximately 90 percent had Graves' hyperthyroidism; 1 percent had primary hypothyroidism; 3 percent had Hashimoto's thyroiditis, and 5 percent were euthyroid.[4] One temporal relationship between TED and hyperthyroidism was also found. In 20 percent of TED patients, both diagnoses were made at the same time; in about 60 percent of them, TED occurred within the first year of hyperthyroidism diagnosis; the rest of TED patients had the risk of thyroid abnormalities—25 percent within one year and 50 percent within five years.

Clinical Course and Follow-up

TED has variable presentations and severities in different individuals. Therefore, it is of essential importance for patients to be checked by ophthalmologists in different stages of TED. We suggested three time points for visit—onset of thyroid dysfunction, acute onset of TED and stable condition of TED. Most patients with newly diagnosed thyroid dysfunction are free of clinical symptoms, though some subtle clinical signs can be found such as mild lid lag or retraction. A baseline examination or record can be established at this stage. Additionally, it facilitates the good relationship between patients and ophthalmologists. Such mutual trust will bring patients better understanding and communications with physicians, which is crucial to those patients who need

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surgical intervention to rescue vision in the acute stage or to achieve better cosmetic results in the stable stage of TED.

With disease progression, clinical signs present as chemosis, conjunctival injection and redness, and swollen upper and lower eyelids. If left untreated, acute onset of TED ensues. With increasing tissue swelling, impairment of extraocular muscle motility or restrictive myopathy occurs. Diplopia is usually prominent in such condition. Elevation of intraorbital pressure can lead to compressive optic neuropathy which, if left untreated, can lead to vision loss in severe TED patients. In the acute stage of TED (*See Figure 1*), the ophthalmologist's role is to offer medical or surgical treatments to relieve discomfort and rescue vision.

Regardless of treatment or not, TED usually moves to a stable or chronic stage as time passes. Though acute inflammation is under control, variable sequela such as proptosis, lid retraction or strabismus remain. During this stage, intervention with proper ocular surgery tends to achieve better cosmetic or visual outcomes.

Clinical Diagnosis

TED is clinically diagnosed if eyelid retraction (upper eyelid position at or above the superior corneoscleral limbus) occurs along with thyroid dysfunction (preferably included but not limited to), or extraocular muscle involvement (determined by CT, MRI or ultrasonography), or exophthalmos (exophthalmometry measurement ≥20 mm), or optic neuropathy. In the absence of eyelid retraction, TED can be considered to be present only if extraocular myopathy, optic neuropathy or exophthalmos exists simultaneously with thyroid dysfunction.

Image Studies

As mentioned before, TED is mainly a clinical diagnosis. Image studies play some role when the diagnosis is uncertain. CT is used to assess EOMs enlargement, fatty expansion and optic nerve compression, especially before surgery and as a follow-up after treatment. Compared to CT, MRI does not offer significant advantages, except for evaluation of the optic nerve.[5] Typically, enlargement of the EOMs involves the belly of the muscle and spares the anterior tendinous insertions; this is in contrast to orbital pseudotumor, in which muscle tendon insertion tends to be thickened. By image studies, inferior rectus is the most commonly involved extraocular muscle, followed by medial rectus, superior rectus and lateral rectus. In cases where an isolated lateral or superior rectus is enlarged causing proptosis, a diagnosis other than TED should be entertained, leading to muscle biopsy *(See Figures 2a and b)*.

In addition to traditional imaging, digital infrared thermal imaging may aid in determining the inflammatory state of TED and follow-up effects after disease treatment.[6] This imaging modality can detect local temperatures of orbit, and that these temperatures are elevated in active TED. The temperature decreased in patients who were responsive to methylprednisolone pulse therapy.

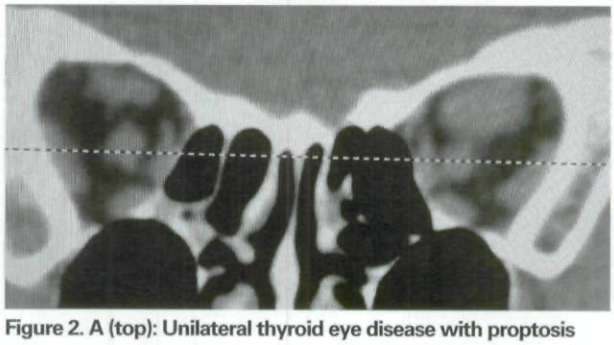

Figure 2. A (top): Unilateral thyroid eye disease with proptosis and eyelid retraction. B: CT scan demonstrates enlarged isolated superior rectus muscles atypical for TED.

Management

An association between tobacco smoking and TED was first described in 1987,[7] and there are growing numbers of studies to support a causal link.[8] These studies provide strong evidence for a causal association between smoking and development of TED. Current smokers were also more likely to experience disease progression or poorer outcome of treatment. Thus, TED patients who are smokers should be given strong support to quit smoking.

Permanent control of hyperthyroidism can be achieved by either radioiodine or thyroidectomy, both of which seem to be essential for the course of TED. However, Luigi Bartalena found that radioiodine therapy alone will cause eye disease progression in TED patients with high-risk traits.[9] These traits include smoking, severe hyperthyroidism, uncontrolled hypothyroidism, high level of TSH receptor antibody and other preexisting eye inflammatory disease. However, such exacerbation by radioiodine can be prevented with concomitant glucocorticoid administration. Thyroidectomy itself does not worsen the TED.[10]

Concerning ophthalmopathy of TED, there are three main managements for intervention—medication, radiation and surgery. Corticosteroids are the mainstay of anti-inflammatory and immunosuppressive therapy of TED and are usually the first choice for treatment. On account of the side effects of steroids, they are not administrated unless moderate to severe symptoms of active orbital inflammation (such as severe orbital congestion, corneal

involvement or optic neuropathy) are present. Unfortunately, disease recurrence after cessation of treatment is not uncommon.

Several novel immunomodulatory medications were used as TED therapy. Rapamycin, a macrolide-class antibiotic, also inhibits cytokines and growth factor-mediated proliferation of fibroblasts and immune cells (T and B cells). Rituximab is a monoclonal antibody directed against CD20, a B lymphocyte surface antigen. Inhibition of B cells should theoretically eventually dampen the inflammatory process in TED. Infliximab is a monoclonal antibody against TNF-α, a cytokine, which is of known importance in TED. All of these drugs have demonstrated effectiveness in select cases of steroid-resistant TED.

Radiotherapy is effective in TED because inflammatory cells and lymphocytes, in particular, are radiosensitive. Results are typically seen within one to eight weeks of treatment. Colum Gorman, MD, PhD, reported that radiation lessens the amount of proptosis, and this may, indeed, be true;[11] however, the effect seems to be less apparent after three months of radiotherapy. Severe complications such as radiation retinopathy with vision loss from this low-dose radiation are uncommon. The most common complication is dry eye, the symptoms of which can be lessened with some lubricating eye drops.

The common indications for surgical intervention in TED include optic neuropathy, diplopia, corneal exposure and cosmesis. By and large, surgical procedures may be directed toward orbital decompression, strabismus repair, and the correction of eyelid malpositions. As a general rule, the most invasive surgery is performed first; thus, optic decompression, strabismus surgery, eyelid surgery is the exact temporal sequence.

Orbital decompression may be necessary on an urgent basis for apical compression of the optic nerve or severe proptosis with corneal ulceration refractory to other treatments. Decompression of orbital contents can be accomplished either by removing bony walls of the orbit, allowing prolapse of the orbital contents, or by removing orbital fat, thereby decreasing the amount of tissue in the orbit. Any of the walls of the orbit may be removed, allowing expansion into the ethmoid sinus medially, maxillary sinus inferiorly, the temporal fossa laterally, and the cranial cavity superiorly. Removal of orbital fat without bony resection is now performed as a primary procedure in selected patients, particularly those with CT evidence of orbital fat expansion dominant instead of extraocular muscle enlargement.

Figure 3. A (top): Stable thyroid eye disease with symmetric proptosis and eyelid retraction. B: Post-transcaruncular decompression of medial wall and floor reduces proptosis and eyelid retraction.

It's not uncommon that strabismus is worsened after decompression surgery. Due to this reason, strabismus surgery is best performed after decompression, when the ocular deviation has stabilized, usually at least six months.

Because vertical muscle surgery can result in further lid retraction secondary to connective tissue attachments between these muscles and the lid musculature, lid surgery is best performed after strabismus surgery. Further decompression alone can often reduce lid retraction *(See Figure 3a and b)*. Common eyelid procedures include lateral tarsorrhaphy, lengthening of Müller's and levator muscles, lower lid elevation and blepharoplasty. Lid surgery may help improve cosmesis and may often be combined with vertical eyelid repositioning. As a general rule, most oculoplastic surgeons prefer to wait until orbitopathy is stable for at least six months, with no change in lid position or eyelid edema.

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RE: Kim et al. Versatile Use of Extended Transconjunctival Approach for Orbital Reconstruction. Ann Plast Surg 2009;62:374–380

To the Editor:

We appreciate Dr. Kim and his colleagues' recent demonstration of extended transconjunctival approach for orbital reconstruction.[1] Their report brings to paper what many orbital surgeons often do, modify and extend the transconjunctival orbital approach to gain better access to the medial or lateral orbit.[2] We respectively offer a few comments on their work.

First, the term "lateral canthotomy," is defined as an incision through the lateral canthus, or, more specifically, to disinsert the lid from the lateral canthus, which is a common procedure in dealing with ocular emergencies such as retrobulbar hemorrhage with increased intraocular pressure. According to both the authors' description and the illustration in Figure 1, the term they called lateral canthotomy is a misnomer. The technique as described is a "lateral full-thickness blepharotomy" instead of a lateral canthotomy. In other words, their technique involves an incision through the lateral eyelid, medial to and avoiding the lateral canthus.

Second, in order to achieve a better surgical exposure in orbital reconstruction, a true lateral canthomy, often with a lateral cantholysis, is necessary, particularly if one needs access to the superiolateral portion of the orbit. For most surgeons in dealing with maxilla-malar fracture, this approach (lateral canthotomy with lateral cantholysis) is usually a gold standard, which requires adequate surgical exposure. However, the author adapted a lateral full-thickness blepharotomy with extended skin incision approach, which is a less common approach compared to the one we mentioned above. Additionally, the author didn't state and provide evidence to show their approach offered any advantage over the lateral canthotomy approach. Although the lateral canthal approach can be associated with postoperative problems such as rounding of the lateral canthal angle, with proper wound construction and closure this is avoided. Furthermore, other eyelid malpositions can be prevented, such as lid retraction by supraplacing or tightening the lateral canthal tendon. In the technique describe by Kim et al, although eyelid malpositions was low, malpositions such as lid retraction, ectropion, and visible scar from eyelid notching are possible.

We congratulate the authors in describing this modification of the transconjunctival approach. Although the misnomer may not obscure the virtues of this article, we still insist any medical terminology should be accurate and precise.

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AQ: 1

AQ: 2

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