

Abstract of Papers Presented at the 148th Research Meeting of the Medical Research Centre of Bombay Hospital Trust on Monday 12th March, 2007 (Convener Dr. HL Dhar)

1. Endonasal CSF Rhinorrhoea Repair - Advantages as Against Transcranial Repair

Anamika Rathore, Nishit Shah

Advances in imaging and endoscopic techniques have improved the ability to diagnose, localize and treat in a less morbid fashion CSF leaks of the anterior skull base. The use of endoscopy has revolutionized the treatment aspects leading to better and successful results.

Here we have done a cross-sectional study of 30 cases of CSF rhinorrhoea where endonasal endoscopic technique has been used for repair. The patients have been followed up regularly and successful results are accomplished except for two failures. The aim of this study includes the advantages of endoscopes in repairing a CSF leak as against transcranial repair. The biggest advantage is precise localization of the leak under direct vision. Having done that the mucosa can be cleared from the bony defect without causing any significant increase in size of the defect. It also ensures accurate positioning of the graft material over the defect. Since this is essentially an endonasal procedure there is always a possibility of revision surgery in case of failure.

In our study we found that the most common cause of CSF leak was spontaneous which was 60% and the least common was congenital. The most frequent site of leak was lateral cribriform 60%, followed by sphenoid which was 43.3%.

We had a success rate of 93.30%. The failed repairs were managed by transcranial surgery.

Whenever possible the endoscopic approach should be used for anterior skull base leaks and it should be the treatment of choice. The key to a successful repair is to understand the mechanism and physiology of CSF production as regards its production and absorption. Despite one's best efforts a leak may persist in case of increased CSF pressure caused by overproduction or underabsorption. So to conclude the use of endoscopes along with expanded reconstructive techniques have greatly reduced the morbidity associated with the conventional transcranial repairs and has given more successful results.

2. Endoscopic Pituitary Surgery

Seemab Khan, Nishit Shah

Operations on the pituitary gland are most of the times for the removal of tumours. The leading textbooks of hundred years ago described the pituitary gland as surgically inaccessible area. After the initial trial of transcranial approach, since late 1970s trans-septal approach was a routine.

With the advent of nasal endoscopes, the endoscopic surgery is now used for excision of pituitary tumours with favourable results. This presentation describes the endonasal endoscopic parasagittal trans-sphenoidal approach for pituitary surgeries. We have operated upon more than 400 patients using this technique in our hospital. All these surgeries have been done having a team approach with the neurosurgeons. While the ENT surgeon's knowledge of the anatomy of nose and paranasal sinuses is superior, the neurosurgeon's knowledge of the sellar and parasellar anatomy and pathology is far better.

Endoscopic pituitary surgery has various advantages as it offers better illumination and exposure,

decreased morbidity and quicker post-operative recovery. In effects the procedure is quicker and avoids the complications of septal surgery. It offers a panoramic view of the sphenoid sinus and excellent visualization of the sellar and surrounding structures. It also allows for more complete tumour removal and requires minimal nasal packing.

3. Broth Culture Technique in Cases of Infectious Corneal Ulcers - Case Report

Nutan Darda, Sandeep Kataria, D Desai, Padmini Badle

The clinical presentation of an infectious microbial keratitis although at times is characteristic and conforming to the classic description of the aetiological agent may be misleading and thus must always be confirmed by isolating infecting organism on microbiological work up. Microbiological results have also to be interpreted with caution and clinical correlation is required especially if there is no clinical improvement despite treatment given as per the antibiotic sensitivity report. A delay in judgement can have serious ocular consequences including corneal perforation and blindness. Often the yield on culture may be poor and growth may be due to commensal bacteria rather than the offending organism. This may be misleading as in this case report. We, here, suggest a better medium for isolation of organisms. In our hands we have found broth culture to give a better growth of organisms than with direct plating technique. Broth culture technique is a very valuable tool and can be considered as a first line media for microbiological work up of corneal ulcers or as a second line media when the standard technique of direct plating is used but does not result in clinical improvement.

Abstract of Papers Presented at the 149th Research Meeting of the Medical Research Centre of Bombay Hospital Trust on Monday 09th April, 2007 (Convener Dr. HL Dhar)

1. Broth Culture Technique in Cases of Infectious Corneal Ulcers - A Case Report

Dhyanesh Desai, Sandeep Kataria, MK Gupta

The clinical presentation of infectious microbial keratitis although at times is characteristic and conforming to the classic description of the aetiological agent may be misleading and thus must always be confirmed by isolating infecting organism on microbiological work up. Isolating the true pathogen may be difficult at times especially in cases of superficial ulcers due to the presence of commensal microorganisms and very scanty amount of microorganism present in the sample. Microbiological results thus have to be correlated with the clinical signs and symptoms especially if there is no clinical improvement despite treatment given as per antibiotic sensitivity report. Often the yield on culture may be poor due to 1. The growth of the true pathogen being masked by the commensal microorganisms, 2. Delay in transport of the corneal scraping sample which leads to loss of viability of the organism and 3. Improper growth of microorganism due to very scanty amount of organism present in the sample. To overcome all these, we suggest the use of Broth culture technique in the form of an enrichment medium which can increase the chances of isolating the true pathogen even if present in lesser quantity. Broth culture technique is a very valuable tool and can be considered as a first line media for microbiological workup of corneal ulcers. Hereby, we present a case report of an infectious microbial keratitis.

2. Relevance of Screening blood donors for antibody to Hepatitis B Core Antigen (aHBc)

Maya Parihar-Malhotra, Madhuri Wagh, Hitesh Pagare, PA Sakhalkar

All licensed Blood Banks in India test blood units for HIV I and II, HBV, HCV, VDRL and Malarial Parasite, which is mandatory according to the FDA. Screening of the blood units for these various viruses and organisms is important to prevent their transmission through blood transfusion. Hepatitis B virus is a complex 42-nm, double shelled DNA virus, originally known as the Dane particle. Hepatitis B virus has three distinct antigens - a surface antigen, known as Australia antigen (HBsAg), a core antigen (HBcAg) and an 'e' antigen (HBeAg). They stimulate the production of corresponding antibodies i.e. anti HBs, anti HBc and anti HBe. These antibodies and their antigens constitute very useful markers of HBV infection. **Modes of transmission** : It is essentially a blood-borne infection transmitted by infected blood and blood products through transfusions, dialysis, contaminated syringes and needles, and inoculation of minute quantities of blood during surgical and dental procedures. Spread of infection from HBV carrier mothers to their babies appears to be an important factor for transmission. There is ample evidence of spread of infection through intimate sexual contact. **Serological markers** : The Hepatitis B surface antigen is the first to be detected. It appears in the serum during the incubation period before the onset of jaundice. It persists during acute illness, and is usually cleared from the blood stream during convalescence. This may take 4-6 months. The next to appear are the 'e' antigen and DNA polymerase. All these markers precede the onset of disease. The 'e' antigen is a marker of virus replication and therefore a marker of infectivity. Detected within 3-5 days following the appearance of HBsAg, it persists for 2-6 weeks. In carriers, the e antigen may persist for years without seroconversion. Its presence indicates high infectivity. Anti HBc is a sensitive indicator of HBV infection. It develops soon after HBsAg appears and persists without interruption through the phase of HBsAg loss and anti HBs development. **Current HBV epidemiological picture** : Worldwide prevalence of HBsAg- US, France, Australia, UK, Japan 1-2%, India, Italy, East Europe, Russia 2-5%, SEA 10%, Africa 15%. The incidence of post transfusion hepatitis is 1 in 63000 units and in multiple transfused patients is as high as 18 to 30 per cent. In India, seroprevalence of HBsAg varies from 1.86% to 4%. Chronic carriers of HBV are about 3-5%.

Conclusions : • The cost of the anti HBc test, along with anti HBs and HBV DNA PCR (for confirmation) is very high and hence not feasible to be performed on a routine basis. • We cannot currently implement anti HBc as a routine screening test in the donors of our blood bank. • The current study did not reveal any positive findings as the sample size of 389 donors was not adequate. However, we propose to continue the study by increasing the sample size to 2500 and re-evaluating data.

3. Prognostic Significance of Prostate Specific Antigen in Prostate Cancer

SR Kankonkar, SV Joshi, Soares Eric, HL Dhar

Prostate specific antigen (PSA) when compared with digital rectal examination (DDRE) appears to be clinically more useful in detection of prostate cancer. From the clinical point of view methods, besides ultrasonic and other procedures, that help to detect the residual tumour seems to be of great importance. The introduction of tumour markers for the monitoring of cancer patients in clinical practice, serves as an important tool not only for early diagnosis of cancer patients but also for subsequent surveillance as well.

Methods : A total of 140 patients with clinical symptoms of prostatic disease were screened. Clinical and physical examinations of patients were done by urologist. Of which 100 patients with prostate cancer were selected for further evaluation. Staging of prostate cancer was done according to the American

Urologic Association (AUA) and histological grading established by Gleason grade. Clinical history and serum Prostate-specific Antigen (PSA) levels were estimated using IMx system. In post operative follow-up, patients treated for prostate cancer and their follow-up for the period of 12 months were taken. During this period, regular serum PSA levels were measured at the intervals of 3 months.

Results : Results showed that the serum PSA levels increased in prostate cancer patients as age advances. The correlation coefficient (r) was 0.2243; and the P value < 0.05 (significant). DRE was +ve in 1 patient with serum PSA level of < 4 ng/ml, and 63 patients with serum PSA levels > 4 ng/ml; whereas, however, 15 patients with -ve DRE showed serum PSA levels > 4 ng/ml. The serum PSA levels correlated with the clinical stage from stage A to stage D (r) = 0.9170, having the P value < 0.05. Thirteen patients had reported for 12 months follow up. All these patients had preoperative elevated serum PSA levels. Of these, 10 patients had normal PSA levels at the end of 12 months and showed clinically no evidence of the disease. Three of these patients developed recurrence of the disease and showed elevated level of PSA, one patient died after the last follow up. Sixty seven patients were followed up for 3 months which showed reduction in PSA value while remaining 20 patients could not be followed.

Conclusion : Preoperative and postoperative assessment of PSA proved to be the ideal predictor of relapse. Potential prognostic value of preoperative serum prostate-specific antigen levels adjusted for total tumour volume (PSA-TTV density) for outcome following radical prostatectomy.

Abstract of Papers Presented at the 150th Research Meeting of the Medical Research Centre of Bombay Hospital Trust on Monday 11th June, 2007 (Convener Dr. HL Dhar)

1. Affordable Means of Using the VAC Principle

Amod Rao, SR Tambwekar, MR Thatte, K Khadalia, A Patil

Vacuum-assisted closure (VAC) was described in 1993 and the scientific validation followed. The indications are evolving but the use of the principle should not be hampered by the cost of the unit or its non-availability. More easily available methods of creating the negative pressure should be considered. VAC stimulates granulation tissue formation, local blood flow and wound contraction by means of the negative pressure itself and by reducing local oedema, extracting exudate/transudate and the local bacterial load. It is an extension of the vacuum assisted drainage principle the difference being the extended duration of application. In 'properly' selected situations it is applied to hasten wound preparation for further definitive surgery, to downgrade the final procedure from a flap to a graft or suturing or even no surgical intervention and to stimulate the process of healing in certain slow-healing or non-healing situations. This principle was applied in the surgical management of 12 cases of sternal dehiscence — surgical debridement, soft tissue mobilization upto the mid-clavicular line, deep de-tensioning sutures, closure in layers with three tube-drains in the different planes attached to vacuum drainage bottles continuously in the initial post-op period till the drainage decreased to less than 10 ml in 24 hours which was found to happen by day 7-8, thereafter the tube was clamped for 5 mins in every hour and the drains were maintained for the further 7 days. Eight of the patients were diabetic and 9 of them had undergone unsuccessful secondary closure prior to referral. Two developed skin edge (1 cm on either side) necrosis which also finally healed while the others had uneventful recovery. The other cases included a) retro-

clavicular abscess cavity in a diabetic-closure of skin with suction drainage tube in cavity for 10 days - healed, b) necrotizing fasciitis of the lower limb in a diabetic - limb was enclosed in a plastic bag, 7 days suction drainage then grafted, c) sacral pressure sore in a paraplegic - VAC 10 days then successfully grafted. At times it may be time-consuming and cumbersome to apply and an airtight seal difficult to achieve but the advantages of VAC far outweigh these setbacks. By going back to the evolution of the concept and using the vacuum drainage bottle or the electrical suction unit we were able to make it more affordable. Where even these are not available, the Wangenstein device could be improvised. One could also consider using stoma-care products to achieve a longer-lasting seal allowing for wound inspection.

DEFINING NEUROMYELITIS OPTICA

'The use of these characteristics to distinguish neuromyelitis optica from multiple sclerosis has considerable implications for clinical practice and is important for preserving the validity of therapeutic trials for multiple sclerosis by not enrolling patients with neuromyelitis optica'

Neuromyelitis optica (also known as Devic's disease) is an idiopathic, severe, demyelinating disease that preferentially affects the optic nerve and spinal cord. As Dean Wingerchuck and colleagues review in the September issue of *The Lancet Neurology*, neuromyelitis optica can now be distinguished from multiple sclerosis and other demyelinating disorders on the basis of clinical, laboratory, immunological, and pathological characteristics. The authors also discuss what implications the identification of NMO-IgG, an autoantibody that recognises the water channel aquaporin 4, might have for the classification of neuromyelitis optica, for the understanding of the underlying mechanisms, and for the development of potential treatments.

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ANAEMIA MANAGEMENT IN HAEMODIALYSIS PATIENTS

Conventional treatment with epoetin to manage anaemia in chronic kidney disease needs frequent administrations, changes of dose and close monitoring of haemoglobin concentrations. Nathan Levin and colleagues did a randomised non-inferiority trial to compare the effectiveness of methoxy polyethylene glycol-epoetin beta, given intravenously at 2-week or 4-week intervals, with conventional epoetin treatment for haemoglobin control in haemodialysis patients. They showed that intravenous methoxy polyethylene glycol-epoetin beta, given every 4 weeks, maintained haemoglobin concentrations within a target range as effectively as epoetin alpha or beta given one to three times a week.

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