



JAYPEE MED REVIEW

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Critical Aortic Stenosis in Neonates and Infants: Two Different Scenarios and Outcomes

A ray of hope for
Corneal Blindness:
Penetrating
Keratoplasty

Adult Onset
Craniopharyngioma

Spinal Deformity
& Vertebral
Compression Fracture
in Elderly



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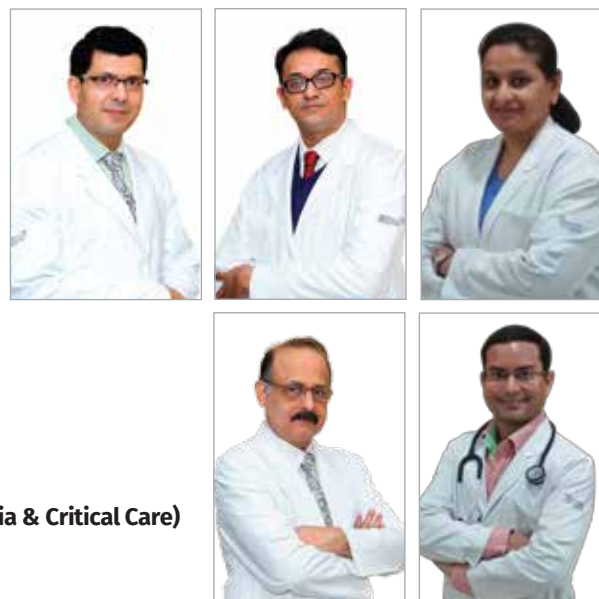
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Critical aortic stenosis in neonates and infants: Two different scenarios and outcomes



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A Catheter based treatment of congenital heart disease is a norm. Neonates and infants less than 3 months old represent the most fragile group of patients owing to their smaller size, poor cardiac reserve and severity of cardiac disease. Critical Aortic Stenosis represents one such lesion where left ventricle decompensates rapidly & if uncorrected, the condition can be rapidly fatal. We describe two such infants (with two different clinical outcomes), who underwent catheter intervention in our hospital during the last 2 months.

Case1: A 50-day-old, 3.8kg baby was evaluated in our OPD for a systolic murmur. The infant had a history of poor sucking and excessive sweating while feeding. At the time of evaluation, the baby was irritable and a grade 3/6 systolic murmur was heard at the aortic area. Echocardiography revealed severe valvar aortic stenosis with peak Doppler gradient of 100mmHg and mean gradient of 80mmHg across the aortic valve. LV function was normal. The aortic valve annulus was measured to be 8.5mm in diameter. Balloon dilatation of aortic valve was carried out under general anaesthesia using a TyshakII balloon 7mmx2cm. The annulus to balloon ratio was set at 0.9. Post dilatation, the gradient across the aortic valve dropped to 35mmHg with no aortic incompetence. Post procedure, the patient was discharged after 24 hours.



Fig.1 Shows narrow jet of blood through the stenosed aortic valve

Case2: A 20-day-old baby was referred to our hospital on prostaglandin infusion. He had been diagnosed with a critical aortic stenosis; dysplastic aortic valve and coarctation of the aorta. The baby had been on prostaglandin infusion since birth. Initial evaluation revealed a thickened bicuspid aortic valve with severe LV dysfunction – LVEF 20%. There was a large PDA and the aortic arch appeared to be mildly narrow just opposite to the site of the PDA. The initial haematological evaluations revealed a deranged elevated white cell count and CRP. Keeping in view the critical condition, the patient underwent balloon dilatation of aortic valve under antibiotic cover – Vancomycin and Meropenem. The aortic annulus measured 5.5mm on 2D echocardiography. Balloon dilatation of aortic valve was done using 5mmx2cm Tyshak balloon, keeping annulus to balloon ratio of 0.9. Post balloon dilatation, the pressure gradient across the aortic valve dropped to 30mmHg with mild aortic valve incompetence. Ventricular function normalised after 48 hours. The baby underwent PDA ligation after 3 days as the PDA failed to close after stopping prostaglandin infusion. The initial blood cultures grew candida and gram-negative bacteria. Patient developed features of capillary leak and multi-organ dysfunction despite proper antibiotic coverage. The child had extremely slow recovery and a prolonged ICU stay despite successful cardiac interventions. Child finally succumbed to ongoing gram negative multiresistant sepsis.



Fig.2 Shows balloon being inflated across stenosed aortic valve

Discussion

Left ventricular outflow tract obstructions represent 6% cases of congenital heart defects, with an approximate occurrence of 3.8/10,000 live births. 80% are due to valvar aortic stenosis and the remaining are due to supravalvar or subvalvar causes. In almost 15% children with valvular AS, it presents itself within the 1st year with severe stenosis and requires intervention. Neonates tend to tolerate severe obstructions very poorly and rapidly develop LV dysfunction, low cardiac output and succumb to death. Balloon dilatation of aortic valve in symptomatic patients or patients with aortic valve Doppler gradient >75mmHg is a lifesaving procedure. It requires cannulation of femoral artery using 3 or 4 French sheaths. The stenosed valve is crossed using a 0.18inc diameter wire and the aortic valve is then dilated with a Tyshak II balloon. The balloon diameter is kept about 80-90% to the size of the aortic annulus. A reduction of pressure gradient by 50% is considered successful valvotomy. Most of these patients require lifelong follow-up and may require aortic valve replacement in adulthood. An early detection and intervention gives good results as demonstrated through our 1st case, where we discharged the child after just 2 days of hospital stay. Delayed intervention results in ventricular dysfunction, multi-organ dysfunction, superadded infection and contributes to prolonged hospitalization, as evident in our second case.

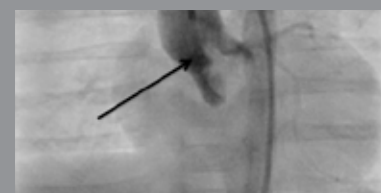


Fig.3 Shows broader jet of blood through the stenosed aortic valve

Spinal Deformity & Vertebral Compression Fracture in Elderly

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Adult Spinal Deformity (ASD) is defined as a lateral spinal curve of $>10^\circ$ in a skeletally mature person (mean age 60 yrs.). Deformity may occur in the sagittal plane (Kyphosis/ Lordosis) or in the

Overall, back and leg pain is a common symptom, reported by almost 61% of patients with advanced degenerative deformity. Neurological claudication is the most common symptom (90%) of them and the prime reason for surgical intervention.



Fig.1: Pre Op X-ray at 1st follow up

coronal plane (scoliosis) causing side ways tilting. It can be idiopathic which is present without any symptoms since adolescence or can occur because of various etiologies like degenerative, paralytic, posttraumatic, etc. It is becoming an increasingly common cause of lower backache in elderly patients. Patients present usually with leg pain and numbness with varying degree of lower backache, which increases on walking or while changing posture from sitting to standing. They often develop a stooping posture while walking. It can also lead to severe walking restrictions due to pain along with numbness & paraesthesias in lower limbs.

Case Report

Patient, NY 61 female, with a history of

missing a step on stairs while getting down, presented with complaint of severe backache. Patient was not able sit or stand due to severe back pain. On examination patient, she had increased localized tenderness over middle back (D12, L1) and diffuse tenderness over lower lumbar spine. Patient also had a history of persistent back pain since few years with severe restriction in walking due to leg pain and numbness. Patient was also suffering from Osteoarthritis of right knee. On investigation, patient was diagnosed with adult spinal deformity with acute Vertebral Compression Fracture of D12 with sagittal Cobb's angle of 19 degree (Fig.1), and was advised surgical intervention, but patient opted for conservative management and went home, only to return after 6 weeks with



Fig.2: Pre Op X-ray after 6 weeks of conservative treatment.



Fig.3: Comparison X ray picture of preop & at Final Followup

even worsened back pain and was bedridden. On examination, patient was not able to sit and even leg rolling in bed was painful, had increased tenderness over dorso-lumbar junction with knuckle deformity over D12 vertebra (Fig.2). Patient's whole spine X-ray AP/Lat views showed increased kyphosis with sagittal Cobb's of 35 degrees owing to complete wedge collapse of D12 vertebra with increase in coronal tilt also. Patient was advised surgical intervention after clearance by team of Neuro-anesthetist. Patient was explained in detail about the pros & cons of the surgery and after informed consent, patient was taken up for surgery in Nov 2015.

Surgical Details

Under general anesthesia, patient was placed in prone position. Midline incision of about 15 cm was given and subperiosteal exposure done from D10–S1. Free hand technique was used for pedicle screw insertion from D10 to S1, except in D12. For D12, vertebroplasty, (wherein cement augmentation is done via trans-pedicular approach) was performed. Multiple osteotomies in the lumbar spine were done to correct deformity. Appropriate level lumbar decompression was done. Final rod application was done and wound irrigated thoroughly. Locally harvested

bone graft was used for fusion and the wound was closed in layers. Patient withstood the surgery well and had no postoperative complications. Patient was mobilized on 3rd postoperative day with help of Thoraco Lumbar Spinal Orthosis (TLSO) and walker, which was gradually weaned in the hospital.

Postoperative X-rays showed good spinal sagittal balance along with increase in D12 vertebral height (Fig.3&4). Patient started walking with complete resolution of leg pain and claudication symptoms, with residual right knee pain for which she was operated on by a team of Arthroplasty surgeons after 3 months. At the 6 month follow up, patient had no complaints and there was good maintenance of the spinal curve with no hardware related complications.

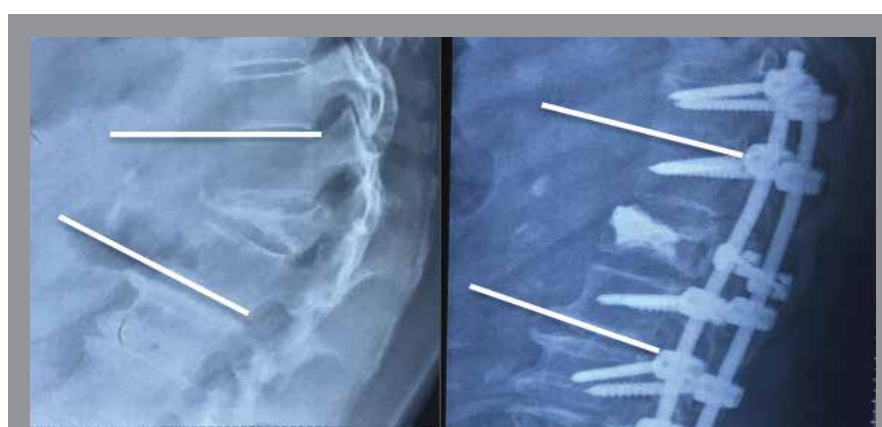


Fig.4: Preop & Postop images comparing the increase of height of D12 after Vertebroplasty

Discussion

Adult spinal deformity is commonly associated with back pain and lumbar canal stenosis, both requiring attention at the same time. In addition, in more than 50% cases, there is involvement of the cervical spine which must be evaluated and screened prior to decision making. Though most of the adult spinal deformities can be treated conservatively through exercises, physiotherapy, and medication, the one present with severe claudication in lower limbs require surgical intervention. With the advent of better spinal implants, techniques along with better understanding of the disease and improved pre and postoperative care, the morbidities associated with surgical management of adult spinal deformity have drastically decreased over time. In case of patient having bilateral knee pain due to osteoarthritis with features of neurological claudication, detailed evaluation of spine should be undertaken and should be prioritised in terms of surgical intervention.

With constant breakthroughs in medical science, better understanding of the deformity and with help of the latest technology, an adult patient with significant spinal deformity along with neurogenic claudication can be successfully treated surgically.

Simultaneous Endovascular treatment in bilateral large ICA para-ophthalmic aneurysms with optic pathway compression



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Case Report

A woman in her thirties presented with progressive visual field loss in both eyes with a presumed diagnosis of glaucoma. She was neurologically intact on examination except for 20/30 vision in the right eye and could only count fingers in the left eye. MRI and CT Angiogram showed bilateral paraophthalmic ICA aneurysms with optic chiasm compression. Digital Subtraction Angiography (DSA) showed large bilateral carotid-ophthalmic aneurysms, right-sided measuring 14.5 x 13.4mm and left-sided measuring 11.4 x 7.1mm with circumferential arterial lumen involvement. Keeping in view the challenging wide-neck morphology of the aneurysm and the risks involved in open surgery, post discussion with the patient's relatives, decision was taken for endovascular treatment of aneurysm with bilateral flow diverter stent placement to decrease aneurysm mass effect and to reconstruct parent vessel. Due to the risk of rupture of the other aneurysm, it was decided to treat both the aneurysms in the same session.

Procedure

Endovascular treatment was done in state-of-the-art Biplane Philips FD20 Clarity Hybrid-DSA Lab. The patient was taken to the Interventional Radiology (IR) suite. The procedure was carried out under GA. Right

femoral artery access was taken with femoral sheath (6F). For aneurysm neck and ophthalmic artery profiling, 3D rotational angiogram was done. Endovascular embolization was done combining approach of flow diversion with adjunctive coil embolization. The patient underwent uncomplicated bilateral P64 flow diverter deployment across the neck of aneurysms followed by partial coil embolization of both the aneurysms. The procedure was completed with no complications and post procedure angiography showed complete exclusion of both aneurysms with preservation of ophthalmic artery. Patient was subsequently discharged with no deficits. On follow up after 6 months, patient showed improved vision in both eyes due to shrinkage in the size of the aneurysm.

Discussion

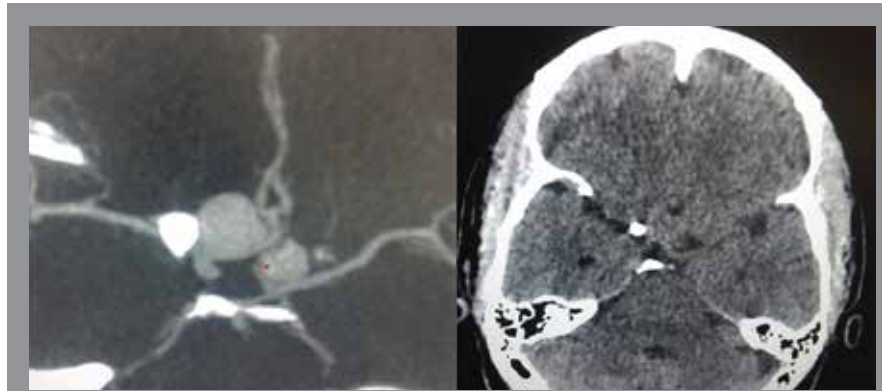
Patients with aneurysms of the paraclinoid segment of the Internal Carotid Artery (ICA) are commonly visually impaired. The proximity of these aneurysms to the optic nerve and the ophthalmic artery can impair patient's vision. Visual deficits are present in 16%-40% of patients with paraclinoid aneurysms. The mechanism of visual impairment is not well understood, but may result from direct mass effect of the aneurysm sac compressing the optic nerve, inflammation, or retinal artery thrombosis. Paraclinoid aneurysms have traditionally

been treated with either clipping or coiling. Visual impairment after surgical clipping is thought to result from manipulation of the optic nerve, which must be mobilized to access the neck of the aneurysm. In traditional coiling, there is risk of further vision deterioration due to increase in mass effect due to coils mass. Flow diversion (FD) represents an alternative modality for treatment of intracranial aneurysms. The idea of flow diversion is based on two fundamentally simple concepts: (1) it was hypothesized that the stent disrupted blood flow from the parent artery to the aneurysm, and (2) the stent provided a scaffold on which endothelial cells could grow, therefore isolating the aneurysm from the parent artery. The flow diverters promote thrombosis of the aneurysm while permitting blood flow to perforators incidentally covered by the stent. Of particular relevance to vision outcomes and optic nerve compression, FD promotes reabsorption of the thrombus and theoretically diminishes mass effect initially intended to treat large, wide-necked aneurysms. Flow diverting stents have demonstrated improved aneurysm occlusion, lower rates of recanalization, and greater reduction of mass effect compared with coiling. This case demonstrates the effectiveness of flow diverter stent in progressive aneurysmal thrombosis after flow diversion and reduction in mass effect over time leading to reconstruction of parent

vessel and shrinkage of aneurysm.

Conclusion

Flow diversion is technically feasible and simpler compared to endovascular coiling and has a low complication rate in treatment of complex and large aneurysms, aneurysms presenting with mass effect, aneurysms with dysplastic parent artery and aneurysms with artery arising from the dome. Compared to microsurgical treatment and traditional endovascular coiling the flow diverter can be used to treat simultaneously multiple complex aneurysms as in this case.



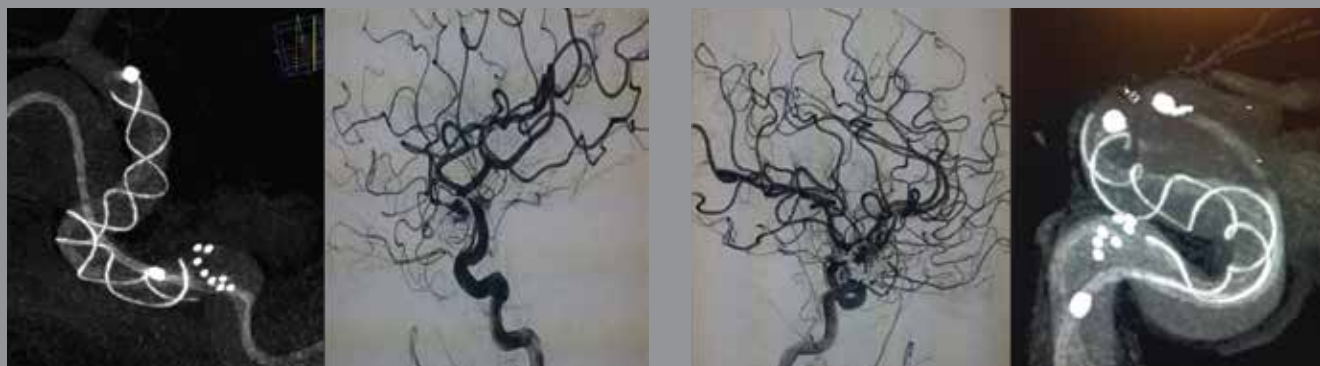
CT angiogram showed bilateral large intracranial paraophthalmic ICA aneurysms



Right paraophthalmic aneurysm measuring 14.5 x 13.4mm with ophthalmic artery arising near its neck



Left paraophthalmic aneurysm measuring 11.4 x 7.1mm with circumferential arterial lumen involvement and ophthalmic artery arising from it



Angiogram post flow diverter placement in right ICA with assisted coiling showed exclusion of aneurysm

Angiogram post flow diverter placement in left ICA showed exclusion of aneurysm

Breast Carcinoma in a Young Patient and Various Related issues

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Abstract:

A young female patient came in the hospital with lump in left breast without any skin or nipple changes, underwent breast conservation with latissimus dorsi flap uneventfully. Histopathology ductal carcinoma in situ with foci of invasion present and nodal positivity. Postoperative period was uneventful but certain issues like psychological, social, fertility related and pregnancy related issues affect the outcome.

Case Presentation:

A 31 years old Hindu female presented to us with the chief complaint of lump in her left breast for past 1 month. She noticed the lump 6 months back. Initially small in size and later on increased to present size. Associated with pain on and off, sudden in onset non-radiating, non-shifting in nature. History of weight loss for last 3 months. History of hair loss also present. History of one miscarriage in the past. Took treatment for primary infertility, tried Intrauterine insemination twice but failed. On examination, a Swelling of around 5 x 5 cm was present in the upper outer quadrant of left breast which was not associated with any kind of skin change, nipple areola complex change. A single ipsilateral mobile lymphnode was positive in the axilla, supraclavicular lymph node negative. Mammography showed BIRADS IV C. FNAC

suggestive of ductal carcinoma. USG and Bone scan were normal. PET scan showed metabolically active disease with lymph node in left breast. Patient was anxious about the large tumor size and outcome of surgery of breast conservation. Patient underwent breast conservation surgery with all adequate margins. The latissimus flap was taken from the posterior aspect on the upper side in such a way that the defect incorporated under brassier line. The muscle of latissimus flap also gave bulk to the cavity created by defect. Moreover the skin colour matched with

the flap colour and hence excellent cosmesis was achieved. Histopathology report came out to be ductal carcinoma in situ with single foci for invasion (less than 5 mm in size). Axillary lymph nodes were involved by tumour. (2/23) Postoperative period was uneventful but still there were various issues related to either disease, treatment or psychological which are discussed. Breast cancer is quite uncommon in very young female. It is generally present in less than 5% of the patients, although most of the patients are present in



Fig. 1: defect and margins



Fig. 3: defect closure with latissimus flap



Fig. 2: defect after wide local excision



Fig. 4: scar in posterior aspect.



postmenopausal age group. Breast Carcinoma is more difficult to diagnose in young female. Breast of young female tends to be more nodular and subject to fluctuation from the menstrual cycle. Fibroadenoma is more common in young age group, so it is difficult to diagnose clinically as well as radiologically as mammogram in 55% of patients demonstrated clearly malignant findings. Ultrasonography also remain inconclusive in young female. Since screening mammography is not recommended in young female, it is unusual for cancer to be detected in this group. Median size of tumour in young age group is large (around 2 cms) as compared to older females (1.5 cm average size) Ductal carcinoma in situ is seen infrequently. The majority of young female are diagnosed with stage II and III as compared to stage 0 and 1 in female more than 35 yrs.

Etiologically, differentiation between breast carcinoma in young and old females

- Age is standard risk factor. Gail model is one of the standard models of risk for breast cancer which includes age.(2)
- Major factor in etiology is genetic pleomorphism.
- BRCA 1and 2 are most common Gene mutations associated with breast cancer.
- BRCA associated cancer have early onset breast cancer and ovary and breast cancer, both in same woman.
- Other diseases are Lfraumani disease (p53 mutation), Peutzjeger syndrome and Cowden syndrome.

Developmental factors also play a role in young women which includes very high birth weight or very high maternal age. (3) Environmental factors may increase the risk of breast cancer in young. Hodgkin survivors or nuclear weapons fallout are example of such types.

Prognostically disease is poorly differentiated, nodal positive, high grade, advanced in nature. So, aneuploidy, lymphovascular invasion and high S phase fraction are common features. Disease is generally of advanced stage (stage III and IV) and has more chances of local recurrence. Moreover disease is more commonly tripple negative.

Breast conservation surgery in young:

- Cavity is more because of high tumor breast ratio and hence more need of flap.
 - Not all the patients in young age group are candidates for breast conservation, there are few contraindications e.g. pregnancy, multicentricity, persistent positive margin etc. So there is more need of radiotherapy in young.
 - There is more extensive intraductal component in young.
 - Radiation dose and use of chemotherapy also has impact on local control.
 - Chemotherapy induces vasomotor changes and premature menopause in young.
- So we can say , young women have a higher failure rate both with mastectomy and breast conservation. So, young patients should receive adequate counselling so that she can think about conservation.

Infertility and pregnancy issues:

The side effects of treatment, particularly chemotherapy affect the fertility of the patients as it causes long lasting amenorrhea, premature menopause and

vasomotor changes. Chemotherapy also increase the long term chances of atherosclerosis in young age group.

Psychosocial and other issues

Some patients feel neglected, isolated and embarassed after diagnosis. Moreover there are post traumatic stress disorders and depression. As the treatment remains costly there is financial loss.

Conclusion:

In young patients, diagnosis may be some what more difficult and delayed. Tumor tends to present at a slightly more advanced stage and the biology of this tumormay be more aggressive. Breast conservation surgery may be associated with great risk of local recurrence in young patients. The defect was closed with latissimus dorsi flap. Fertility is commonly, but not always preserved, depending in part on the age of the patient and type and duration of chemotherapy. Pregnancy subsequent to breast cancer diagnosis has not been demonstrated to be associated with identifiable risk to either the mother or the infant.

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Adult onset craniopharyngioma (Sellar suprasellar mass)



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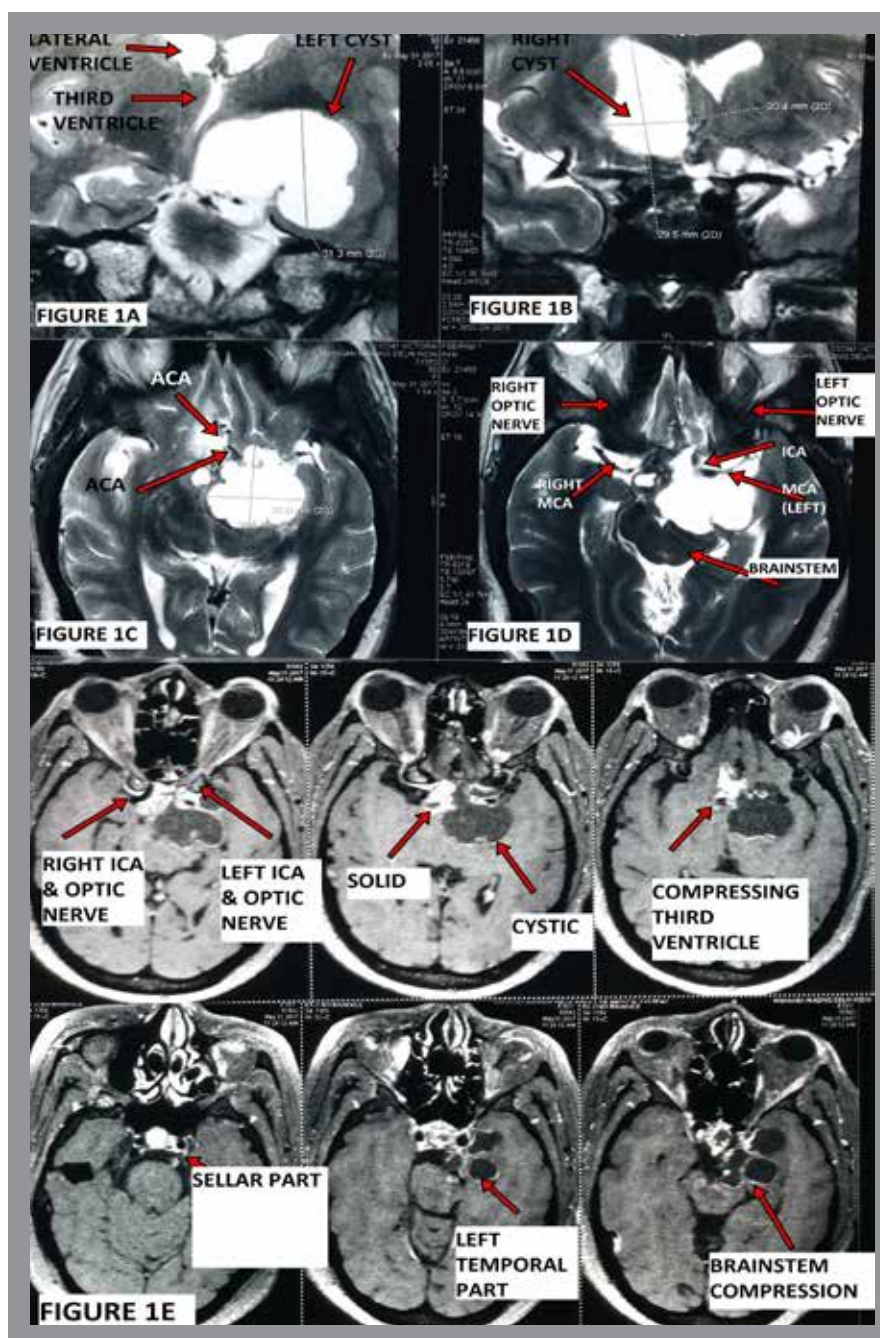
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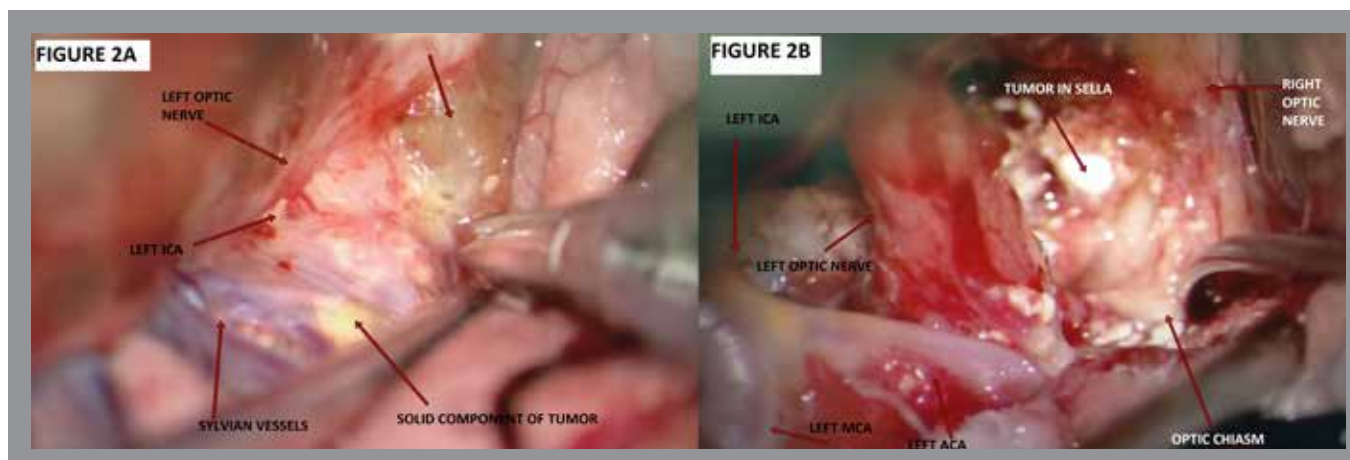
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Case Report

A 50-year-old woman with a history of severe headaches, giddiness and progressive blurring of vision since two years presented with a complete loss of vision in left eye and had minimal vision in right eye. She had intermittent history of polyuria and had one episode of seizures in January 2017. She was a known hypertensive for 10 years and was on regular medications. On examination, she had vision of 6/36 in right eye and only vague perception of light (PL) in left eye. She was obese, but her vital parameters were normal. Her endocrinological work up (T3, T4, TSH, serum cortisol, GH, LH and FSH) was grossly normal. Her MRI brain (plain and contrast) revealed sellar, suprasellar and parasellar mass. The mass had solid and cystic component. It was multiloculated with left cyst of size 4x4cm and right cyst 3x3cm approximately.(Figure 1A&1B). The mass was engulfing bilateral Internal Carotid Artery (ICA), Anterior Cerebral Artery (ACA) and Middle Cerebral Artery (MCA) (Figure 1C&D). The solid component of the tumor had contrast enhancement (Figure 1E). The patient was taken for left frontotemporal craniotomy and tumour excision (left lateral subfrontal approach) under general anaesthesia. The tumor had solid and cystic component. The cyst fluid was greenish in color and the tumor was occupying whole sellar, suprasellar and parasellar region. It was compressing bilateral optic nerves from below and was engulfing both ICA, ACA and MCA (Figure 2A). The tumor was resected in piecemeals and all the structures were made free of





compression (Figure 2B). The patient gradually improved after surgery. She was electively ventilated for 24 hours and then weaned off. Her vision started improving after surgery. Post operatively the patient had transient Diabetes Insipidus (DI) with hypernatremia, which was managed by desmopressin and proper fluid intervention. Patient developed CSF rhinorrhea, which was managed by left frontal sinus packing with allogenic fat graft with bioglue along with lumbar drainage placement. The patient improved and the postoperative CT scan was suggestive of near total removal of the tumor with minimal sellar component (Figure 3). Her vision improved to finger counting at 6 feet in both eyes, and she was discharged in a stable state. The histopathological diagnosis was confirmed as adamantinomatous craniopharyngioma WHO grade I. She was advised radiation therapy in follow up in lieu of the small residual.

Discussion

Craniopharyngioma is an uncommon type of

brain tumor derived from pituitary gland embryonic tissue. It occurs most commonly in children but can also occur in men and women in their 50s and 60s. Adult-onset craniopharyngioma patients have much higher mortality compared to the general population. Craniopharyngioma is quite rare, with an incidence of 0.5 to 2 cases per million persons per year. There are two craniopharyngioma subtypes: adamantinomatous and papillary. Clinical manifestations are due to hypothalamic/pituitary deficiencies, visual impairment, and increased intracranial pressure. Most commonly, the patients present with the visual field defects which can be very well demonstrated by perimeter charting. The MRI plain and contrast is the investigation of choice for proper localization and deciding the treatment protocol. The assessment of endocrinological profile is an essential part of management of this disease. If the tumor is favorably localized, the therapy of choice is complete resection, with care taken to preserve optical and hypothalamic functions. In patients with unfavorable tumor localization

(i.e. hypothalamic involvement), recommended therapy is a limited hypothalamus-sparing surgical strategy followed by local irradiation. The surgical approaches are broadly of two types. The surgery can be done transcranially or transsphenoidally. The modalities used are microscope, endoscope and navigation techniques for high precision. Although, overall survival rates are high (92%), recurrences and progressions are frequent. Irradiation has proven effective in reducing recurrences and progression. The timing of radiation therapy depends upon the age of presentation, site of involvement and extent of resection. Anatomical involvement and/or surgical lesions of posterior hypothalamic areas can result in serious quality of life-compromising sequelae such as hypothalamic obesity, psychopathological symptoms, and/or cognitive problems. It is crucial that craniopharyngioma be managed as a frequently chronic disease, and experienced multidisciplinary teams should provide care to both pediatric and adult patients



Figure 3: Minimal solid residual in sella with no significant mass effect.

A ray of hope for Corneal Blindness: Penetrating Keratoplasty

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Introduction

Cornea transplantation has by far evolved beyond all paradigms to improve the outcomes in terms of recovery, post-operative astigmatism and visual rehabilitation. From Full Thickness Keratoplasty (PKP) to lamellar Keratoplasty (Deep Anterior Lamellar Keratoplasty; DALK/Descemet's Membrane Endothelial Keratoplasty; DMEK) all have been designed to optimize visual outcome and aid in faster recovery.

Case Report

A 34-year-old male physics teacher presented to our out-patient clinic with a history of gradual diminution of vision in the left eye and complete loss of vision in the right eye following a grenade blast in his home country Yemen, 3 months ago. He was treated locally but his vision deteriorated. When he presented to us, his visual acuity in Right Eye was reduced to no light perception, whereas in his Left Eye, light perception was present and projection of rays was accurate. On anterior segment examination by slit-lamp biomicroscopy, RE was phthisical and LE showed impacted pellets in subconjunctival space of bulbar conjunctiva. There was 586 mm corneal opacification with 2 quadrants of superficial vascularisation and limbal stem cell loss from 9a.m. - 2 p.m. due to combined thermal and chemical burns. As fundus was not visible, we did a B-Scan to confirm the integrity of the posterior

segment which revealed minimal echoes in vitreous cavity and mild RCS thickening. Optic nerve head appeared normal. CT Scan of orbit was carried out to rule out the presence of any intraocular foreign body. A full thickness penetrating keratoplasty was planned with 7.5/8mm host/donor button trephination and donor button was transplanted to host bed and secured with 16 interrupted, radial sutures. A lateral tarsorrhaphy was also done. He was discharged the following day with all the necessary medications. One week following surgery, his vision significantly improved to 6/36 unaided and couldn't contain his joy of being able to see once again. Graft was relatively clear with a few descemets membrane folds. Graft-host junction was well apposed with intact sutures, anterior chamber was quiet, and pupil was round and regular. The lens was clear. Fundus examination revealed healthy disc and vessels. Foveal Reflex was present. He would be now on regular follow-ups.

Discussion

Keratoplasty brings a new ray of hope to individuals who have lost sight to corneal blindness. They need to be followed up at regular intervals till almost a year and half to ensure best visual outcome. We also need to explain signs of rejection like diminution of vision, photophobia, and pain if experienced by the patient to be reported immediately within 48 hrs as early rejection can be reversed with pulse

methylprednisolone therapy. There is high risk of rejection when there is more than 1 quadrant of vascularisation or when the patient is young. Graft failure can occur secondary to rejection or due to uncontrolled Intraocular Pressure (IOP). Therefore, IOP needs to be maintained in normal range. Tight suturing, steroid responsiveness can lead to high IOP, which has to be medically/surgically controlled. One can start doing alternate suture removal after 8 months in 2-3 appointments under all aseptic precautions. Thereafter, Rigid Gas Permeable (RGP) lenses can give best visual outcome. Arcuate keratotomy can aid in easing high astigmatism. A maintenance dose of steroid needs to be continued life long.

Conclusion

There is no feeling like giving the joy of sight to a blind man. It brings a ray of hope and self-satisfaction in one's profession.

Management of severe early childhood caries in a pre-cooperative child under general anaesthesia



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Introduction

It is not uncommon for a paediatric dentist to come across pre-schoolers (<6 years old) with grossly mutilated dentition owing to early childhood caries. Restoring the dentition to achieve functional and esthetic goals may become challenging if the right amount of cooperation is not available from the child. Such behavioral problems are prevalent owing to changing parenting styles, dental anxiety and pre-cooperative age (< 3 years old). In such situations, general anaesthesia becomes a favourable option for successful and safe delivery of dental treatment.

The present case report describes management of a 3-year-old child with severe early childhood caries under general anaesthesia.

Case Report

A 3-year-old girl child reported at the OPD of the Dental Department, Jaypee Hospital, Noida with a chief complaint of pain in upper front region of jaw and multiple decayed teeth. The child as well

The NPO instructions were explained verbally as well as a written set of instructions was provided to parents. The instructions were reinforced telephonically and the compliance to instructions along with fitness was evaluated on the morning of the day of operative procedure.

as the parents were anxious. Moreover, the child was highly uncooperative and emotionally immature. Intra-oral examination revealed root stumps of maxillary incisors, i.e., 51, 52, 61, 62 (Fig.1a). Radiographic examination revealed sound roots, free from any resorption and development of permanent successor teeth. It was decided to perform pulpectomies for all maxillary incisors. Keeping in mind the esthetic concerns of the parents, we decided to restore the crown structure with celluloid strip crown forms. Further, as the treatment did not seem to be feasible under routine behaviour management, it was decided to perform dental rehabilitation under day care general anaesthesia.

Informed consent was obtained from parents. The Consultant Anaesthetist performed a pre-anaesthesia check-up to ensure fitness to undergo general anaesthesia.

After induction of general anaesthesia with oral intubation, throat pack was placed. Caries excavation was done and access was gained to root canals of all maxillary incisors one by one. Pulp was

extirpated and the electronic apex locator was established. Under thorough irrigation with normal saline, biomechanical preparation was done using rotary Protaper system till size F1. Obturation was done with Metapex and coronal seal was obtained with glass-ionomer cement; leaving 3-4mm of coronal canal space for post placement. While composite was condensed for short composite posts in prepared post space of lateral incisors (bearing in mind the wider dimensions of canals of central incisors), ribbon was used as post material (Fig.1b). Coronal reconstruction was carried out by condensing composite using celluloid strip crown forms (Fig.1c). With Soflex discs, (Fig.1d) the final finishing and polishing of restorations were carried out. Fissure sealants were placed on all molars.

The child recovered from general anaesthesia uneventfully and was discharged after 3 hours.

The immediate follow-up appointment was scheduled at 24 hours when post-operative radiograph was conducted and instructions regarding routine oral care and diet were delivered.

At the 6 month follow-up, all of the restorations were noticed to be serving well and the parents were happy with the outcome.

Discussion

In the present case report, we take the opportunity to highlight the utility of general anaesthesia to render the dental treatment efficiently as well as safely. In an emotionally immature child, inability to cooperate and fear towards dental treatment often preclude the successful delivery of dental care. General anaesthesia comes to the rescue in such situations and allows efficient delivery of dental treatment lasting only a single appointment. Although general

anaesthesia imposes an additional financial burden, it can be justified by eliminating the need for multiple appointments. In addition, it serves as the only pathway to ensure successful dental treatment as in the present case. The improvement in oral health related quality of life has been reported after full mouth rehabilitation under general anaesthesia and similarly in the present case, rehabilitation from grossly mutilated to pain-free functional dentition resulted in happy parents and child.

Conclusion

General anaesthesia offers an efficient and safe approach to deliver dental treatment to young and anxious paediatric patients lasting only a single appointment.



Fig. 1: (a) Preoperative view, (b) Short composite post in lateral incisor and Ribbon fibre post in central incisor, (c) Strip crowns in place, (d) Final postoperative view

Our endeavour towards quality (July to Sept 2017)

Our main objective is to provide quality healthcare at affordable cost to our clients. We believe in putting our best efforts to achieve this. Our Quality team monitors the quality of services across various divisions and works consistently to improve them. The celebration of International Patient Safety Week from 1-6 May 2017 and the World Hand Hygiene day on 5th May 2017 were incipient steps towards this goal. Each day was dedicated for each IPSPG goal and active participation of employees and patients was sought. The hand hygiene rate among our nursing team has been 81% in the last three months. The average IPD bed occupancy in the last three months has been 65.16%. The patient satisfaction index for the IPD and OPD is

82% and 97% respectively. The top management has been monitoring the satisfaction index and comments regularly through the feedback mechanism every month. Our Cath lab team has been striving to give quality services and the complication rate (post Cath procedure) and unplanned returns to the cath lab has been zero percent. Our team of anesthetists have assisted in 1567 surgeries and the anesthesia care plan change has been limited to 0.09%. Our diagnostic services play a key role in patient care and try to minimize the waiting time. The percentage of reporting errors has been 0.01% and 0.06% for Radiology and Laboratory respectively. In order to

assess and maintain organizational standards, various organizational indicators are monitored and reviewed on a monthly basis in the Quality steering committee, such as appropriateness of consent, appropriateness of billing estimates, percentage of medication errors and hospital-acquired infection rate. The parameters of compliance for international patient safety goals has been maintained well above acceptable levels.



1. Improve accuracy of patient's identification

- Patient Name
- UHID

2. Improve effective communication

- Ensure verbal order policy is followed
- Ensure proper patient handover

3. Improve the safety of high alert medications

- Ensure Medication Management Policy is followed

4. Ensure the correct site, procedure and patient surgery

- Follow time-out before all surgeries & invasive procedures

5. Reduce risk of health-care associated infections

- Follow 5 moments of hand-hygiene
- Perform 6 steps of hand-hygiene

6. Reduce risk of patient harm resulting from falls

- Ensure fall prevention protocols are followed

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