#ESA Abstracts 20170149
Feasibility of C2 Translaminar Screw in Post-Traumatic Atlantoaxial Instability

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Introduction: Atlantoaxial transarticular screws and C2 pedicle screws result in rigid fixation and high fusion rates. However, both are technically demanding and carry an increased risk of vertebral artery (VA) injury. Besides, there are limitations inflicted by anatomical variability. In up to 20% of cases, pedicle and transarticular screw placement is not possible due to a high-riding vertebral artery or very small C2 pedicles. Translaminar fixation of the axis with crossing bilateral screws provides rigid fixation. It is technically simple with safe trajectory and less challenges. Additionally, it is not affected by variations in individual anatomy and does not place the VA at risk.

Methods: We presented our first experiences and clinical results with this method of fixation. Twelve patients were treated between 2014 and 2017 in our Neurosurgical Department at Mansoura University with C2 translaminar screw fixation for traumatic upper cervical spine instability.

Results: Nine patients were men and three were women. Mean age was 22 years. All patients were clinically assessed and had CT scans preoperatively to assess the dimensions of the planned screws. In all patients, bilateral C2 translaminar screws were placed apart from one case that received a unilateral screw. There were no intraoperative complications regarding screw placement and all patients showed stable conditions postoperatively. Second day postoperative, CT scans were routinely performed to verify correct screw placement. We identified one mal-positioned screw with less than 4mm violation of the spinal canal. None of the patients had additional neurological deficits or need screw revision. Follow-up was performed with reexamination and radiological films on regular basis. Mean follow-up was around 6 months for all patients.

Conclusion: C2 translaminar screws may be a suitable alternative for rigid fixation of the axis for surgeons not proficient in the more technically demanding procedures or when pedicle screw placement is contraindicated or not possible. The technique is safe and results in adequate fixation and minimal complications.

#ESA Abstracts 20170150
Glial Scar Digestion Restore Respiratory Motor Activity Following Cervical Spinal Cord Contusion

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Introduction: Respiratory motor function is often impaired following cervical spinal cord injury (SCI) due to disruption of bulbospinal inputs to the motoneurons that innervate the diaphragm and intercostal muscles increasing morbidity and mortality. Chondroitin sulphate proteoglycans (CSPGs) are unregulated at the site of cervical SCI inhibiting endogenous plasticity and regeneration. Catalysis of CSPGs through chondroitinase ABC (ChABC) application alone facilitates meager functional recovery of the paralyzed hemidiaphragm at acute stages following cervical hemisection. Using a new lateral C3 contusion (LC3C) model of cervical SCI, we investigated if acute application of ChABC can mediate the recovery of complete respiratory motor activity.

Methods: Adult male Sprague-Dawley rats received a 150 kD LC3C. 1 week later animals were treated with four intraparenchymal injections of either ChABC or saline control. At either 2 or 5 weeks following treatment bilateral diaphragm, intercostal, and genioglossus EMG recordings were obtained to assess complete respiratory motor activity following treatment. During EMG recording, a C2 hemisection (LC2H) was performed contralateral to the initial contusion to assess the functionality of the pathways specifically through the contusion. Animals were perfused for immunohistochemistry.

Results: Application of ChABC following LC3C enhances respiratory motor activity and remarkably rescues the diaphragm from paralysis. ChABC was administered 1 week following injury, recordings occurred 2 weeks later (n=6). EMG recordings prior to LC2H show enhanced activity in the diaphragm and intercostal muscles ipsilateral to the contusion compared to controls that fails. Following LC2H, activity persists ipsilateral to the contusion suggesting that induction of plasticity at C4/5 can promote respiratory motor function within the diaphragm and intercostals following contusion compared to controls. LC2H causes an increase in respiratory drive as shown by the increase in amplitude of the recordings. However, as the pathways through the contusion are functional no central apnea is formed and the animal continues to breathe.

Conclusion: The LC3C model of SCI causes significant reduction in complete respiratory motor function ventral to the injury which shows little endogenous recovery potentially due to the increase in CSPGs. Administration of saline control caused no recovery of total respiratory motor function and had minimal effect specifically on the pathways specifically damped by the contusion. Administration of ChABC caused an increase in total respiratory motor activity and specifically caused functional recovery in pathways damaged through the initial contusion. The mechanism through which ChABC mediates this functional restoration of respiratory motor activity is through an increase in plasticity mediated by the catalysis of CSPGs and an increase in 5-HT positive fibers. Intercostal and diaphragm activity are highly synchronised and related to the total recovery of respiratory function following cervical SCI. Following the dual injury, ChABC prevents the effects of a central apnea.

#ESA Abstracts 20170151
Spinopelvic Parameters Correction by Minimal Invasive Transforaminal Lumbar Interbody Fusion in Isthmic Spondylolisthesis

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Introduction: Lumbar spinal fusion has been assumed to be the treatment of patients with failed conservative management in cases of isthmic spondylolisthesis. Instrumented fusion has corrected the
spinopelvic parameters deformity in these cases due to the ability of pedicle screws to reduce and maintain the reduction till the fusion occur. Supported by some growing evidence, the main advantages of percutaneous pedicle screws are the avoidance of unnecessary muscle disruption and soft tissue dissection with decreased blood loss and faster recovery with less hospital stay. Controversy remains about the ability of the percutaneous instrumentation to reduce and maintain the slippage and the fusion rate of these segments. The purpose of this prospective cohort study with review of literature is to study the safety and the effectiveness of minimal invasive transfemoral lumbar interbody fusion (MI-TLIF) in the management of isthmic spondylolisthesis and to study the changes that occur in the spinopelvic parameters of these patients.

Methods: Twenty-four patients with low grade isthmic spondylolisthesis with axial low back pain and/or leg pain were treated with minimal invasive transfemoral lumbar body fusion augmented with percutaneous pedicle screw fixation. The operative data (blood loss, radiological exposure, operative time) were evaluated and the radiological assessment for reduction and the changes in spinopelvic parameters were studied on standing long films X-ray. The patient functional outcome was evaluated using Oswestry Disability Index (ODI) and visual analogue scale (VAS) for back and leg pain and treatment related complications were reported.

Results: The blood loss and operative time were reduced by the increase in learning curve. There was a significant correction in the slip degree and the slip angle in comparison to the preoperative data. Postoperative correction of the spinopelvic parameters till nearly normal values was also obvious which was maintained in the follow up. No major wound related complication was reported. One case showed backward displacement of the cage with no neurological deterioration. Local bone graft from the removed facet joint and parts of the lamina was used with PEEK cages to obtain interbody fusion and the fusion rate was about 95.83% evaluated in the final follow up radiographs. ODI and VAS of back and leg pain were significantly reduced in postoperative data when compared the preoperative ones.

Conclusion: Minimal invasive TLIF with local bone graft has been shown to be a good modality in reducing isthmic spondylolisthesis and correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity. Cost effectiveness of this technique must be evaluated thoroughly with the correct the spinopelvic parameters deformity.

Results: Fifty seven out of 59 patients became better (VAS below 40), 34 changed to 32 patients with VAS from 41 to 60, 19 changed to 20 (VAS from 61 to 80) and 6 to zero (VAS from 81 to 100) in pure lumbar pathology group, while in the second group associated with painful lower limb pathology 37 (VAS 41 to 60), 19 (VAS 61 to 80), 11(VAS 81 to 100) changed to 23, 12, and 8 respectively, 0 patients changed to 14 with VAS from 21-40.

Conclusion: patients who have lower limb painful lesions in addition to the original lumbar spine pathology tends to be less satisfied with the result of surgery than those patients having pure lumbar pathology.

Introduction: Shoulder balance is considered one of the major indicators of patient satisfaction after surgical correction in patients with AIS. Proper correction of main and proximal thoracic curves together with horizontalization of UIV are supposed to promote shoulder balance. In other words, correction of radiological parameters should promote shoulder balance. However, this is not always observed. The purpose of this retrospective study is to determine which of the following radiological measures correlate significantly with clinical shoulder balance; T1 tilt, upper instrumented vertebra tilt, and clavicle rib intersection angle.

Methods: Secondary data analysis via retrospective evaluation of data obtained from high resolution posterior photographs, and whole spine radiographic films taken within the first 3 months postoperative period. The study included 11 cases of AIS operated for correction by modern instrumentation. Measurements were done by surgimap software version 2.2.12. 5.

Results: A weak correlation was found between shoulder balance and UIV tilt (r) = 0.358, p = 0.280. A moderate correlation was found between shoulder balance and both T1 tilt (r) = 0.591, p = 0.056 and clavicle rib intersection angle (r) = 0.469, p = 0.145. 6.

Conclusion: Non of the radiological measures considered in the study between shoulder balance and both T1 tilt did not necessarily promote shoulder balance. However, moderate correlation exists between radiological parameters (clavicle rib intersection angle and T1 tilt) and clinical balance.

Introduction: The role of laminectomy alone as an etiology of post-operative cervical instability is well known. Cervical Sagittal malalignment of the spine has been linked to unfavorable functional outcome, so the effect of restoration of sagittal spinal alignment on functional outcomes and treatment effectiveness has recently gained attention. This study aims to analyzed the radiographic changes in cervical sagittal alignment in patients treated with screw-rod fixation.

Methods: Over a period of 6 months, 30 patients (21 male and 9 female patients; mean age, 57.7 years) underwent cervical laminectomy and
screw-rod fixation. Plain radiographs and computed tomography scans were analyzed preoperatively to assess sagittal alignment (C2-C7). Postoperatively, x-ray radiographs were obtained in all patients, computed tomography scans and MRI needed in some patients. Using the Cobb method, changes in sagittal alignment (C2-C7) were determined by comparing the preoperative and postoperative imaging studies.

Results: All 30 patients were operated for posterior cervical laminctomy and fixation, 224 screws were inserted, 95 levels were fixed and fused ranged from 3 to 5 levels, six facet joints violations were observed. All patients were followed-up for 6 months. The mean pre-operative Cobb angle for all patients was -8.51° ± 14.07a; SD changed to -10.23° ± 10.53 SD at the end of our follow up. The mean preoperative Cobb angle for the lordotic group of patients was -16.4 ° ± 7.81 SD which changed to be -14.1a; ° ± 6.02 SD at the end of our follow up. While the mean preoperative Cobb angle for the group of patients with lost cervical lordosis was 9.89° ± 4.59 SD which changed to 9.20 ° ± 4.6 SD.

Conclusion: Posterior decompression with lateral mass screw fixed rod is an effective method not only for maintaining lordotic cervical alignment but also for correction of some the kyphotic deformities.

#ESA Abstracts 20170155
CT and MRI Changes in the Paraspinal Muscles in Patients with Idiopathic Scoliosis: Prospective Study
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Introduction: Scoliosis is a three-dimensional spinal deformity characterized by lateral and rotational curvature of the spine with cobb angle of 10 or more. It is caused by different congenital, osseous, neoplastic or neuromuscular abnormalities. When scoliosis is not associated with any of these abnormalities, it is called idiopathic scoliosis. Idiopathic scoliosis is further classified according to the age into infantile, juvenile and adolescent. Idiopathic scoliosis (AIS) is usually more evident after puberty due to progressive axial growth. Previous studies revealed that idiopathic scoliosis is associated with abnormalities in fiber composition of the back muscles that result in muscle dysfunction. Histologic studies proved that these changes are more evident on the concave side of the scoliotic curve. The aim of this study is to assess the CT and MRI appearance of the paraspinal muscles in patients with idiopathic scoliosis comparing the convex and concave side of the curve. The relation between the degree of muscular abnormality and the Cobb angle is also assessed.

Methods: 18 patients with idiopathic scoliosis were referred to Mansoura university hospital clinics in the period from September 2015 to February 2017. This study includes patients with idiopathic scoliosis. Patients with secondary scoliosis due to other abnormalities (congenital, neurogenic or neoplastic) were not included in this study. Verbal consent was obtained from the patient’s parents. We included all cases were the cobb angle is more than 10 degrees, 17 cases were AIS and only one case were an early onset scoliosis. AIS cases were classified according to Lenke and we included only Lenke I curves. As part of their routine work-up, these patients were referred to the radiology department for X-ray whole spine (PA, and lateral views), whole spine CT and MRI. The whole spine MRI was performed on (1.5 T) Philips scanner. The participants were scanned in the supine.

Results: Both the CT and MRI clearly demonstrated the atrophic changes of the paraspinal muscles along the concave side and there was no significant differences between the CT and MRI as regard the grade of muscle atrophy, P-value =1.
In our study, both MRI and CT demonstrated the atrophy of the paraspinal muscles in patients with idiopathic scoliosis in the form of reduction in the size of the muscle fibers, T1 & T2 hyperintensities within the muscle fibers by MRI and low density within the muscles fibers by CT as well as widening of the fatty spaces between the muscle bundles. Assessing the paraspinal muscles along the whole spine, we found that in all patients, the atrophic changes were more pronounced at the apex of the curve.

Conclusion: In patients with idiopathic scoliosis, CT and MRI are effective non-invasive modalities to assess the changes in the paraspinal muscles. They demonstrate atrophic changes and fatty degeneration of the paraspinal muscles, more evident at the concave side of the apex of the primary curve. The degree of fatty degeneration is proportional with the Cobb’s angle.

#ESA Abstracts 20170156
Managing Upper Cervical Instability Safety and Efficacy of Polyaxial Screw-rod System Fixation
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Introduction: This retrospective descriptive clinical case study aims to evaluate safety and efficacy of C1L-C2P polyaxial screw-rod system fixation in managing craniocervical instability of various etiologies.

Methods: 42 patients with atlanto-axial instability (UCI) due to various etiologies were done. The primary upper cervical pathology (UCP) in this series was in wide range of Congenital: Down’s syndrome, Os Odentadium, and Neoplastic: plasma cell myeloma, ABC and Traumatic, and idiopathic. Those were surgical treated based on reduction, decompression and fixation by poly axial screws and rods among occipito-atlanto- axial avenue. They were assessed pre- and post-operative and radiologically by; plain X-ray, 3D-Computed Tomography (3D-CT), Magnetic Resonance Image (MRI), and clinically using Japanese Orthopedic Score (JOA) Table-4.

Results: Forty two patients, 26 males and 16 females, mean age 31.6±12 (range 4-52) years treated by C1 lateral mass (C1L) and C2 transpedicular poly axial screws fixation (C2PSF) and fusion had some follow-up mean of 47±9 (range 12 to 72) months . None of the patients developed a new neurological deficit. Preoperatively5 patients had neoplasia, 10 patients had hangman 9 patients had rotatory subluxation (AARF),8 patients with Denis fracture type II, 4 with down’s syndrome, and 8 patients had os odentadium and idiopathic instability each. At the final follow-up, the (JOA) score was: 30 normal (71.5%), 10 on grade I (Excellent), and 4 on grade II (good) (7%). None of the patients had neurological worsening during the follow-up.

Conclusion: This prospective cohort suggested that Lateral mass C1 and transpedicular-C2 polyaxial screws fixation can be safely and effectively used in different entities of upper cervical instability, to achieve good purchase and fusion after decompression and reduction, further prospective studies with longer follow-up are necessary to further establish its validity and safety.

#ESA Abstracts 20170157
Fenestrated Pedicle Screws and Cement Augmentation in Patients with Bone Softening
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Introduction: This prospective study was designed to evaluate the middle-to long-term purchase of cement-augmented fenestrated pedicular screws in patients with poor bone quality due to osteoporosis, infection and/or tumours. The growing number of surgical procedures performed in the spine has highlighted the problem of screws looseness in these patients.
Methods: From May 2015 to January 2016, 25 patients with a poor bone stock condition underwent posterior stabilisation by fenestrated pedicle screws and PMMA augmentation. Pain improvement and long-term clinical outcome were assessed by visual analogue scale (VAS) score and Oswestry low back disability questionnaire (Oswestry disability index ODI). Implant stability was evaluated by plain radiography. Complications were evaluated in all cases.

Results: All patients were clinically and radiographically followed up for a mean of 12.84 months. VAS scores and ODI questionnaire showed a statistically significant reduction in pain and improvement in the quality of life. No radiological loosening or pulling out of screws were observed. Cement leakage occurred in five cases.

Conclusion: Fenestrated screws and cement augmentation provided effective and lasting purchase in patients with poor bone quality. The only clinical complication strictly related to PMMA screw augmentation did not require further surgery. Keywords: Fenestrated pedicle screw, Polyethylmethacrylate, Osteoporotic bone.

#ESA Abstracts 20170158
Combined Percutaneous Pedicle Screw Fixation and Minimal Access Open Posterior Decompression for Treatment of Unstable Thoracolumbar Fractures
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Introduction: Percutaneous fixation of unstable thoracolumbar fractures is increasingly used as an alternative to open surgery. The complexity of the fracture pathology and spine dynamics affects the indications of percutaneous treatment. This study aims to evaluate the percutaneous pedicle screw fixation combined with posterior minimal access decompression of neural canal in unstable thoracolumbar fractures.

Methods: 10 patients with unstable thoracolumbar fractures with significant neural compression who are indicated for both fixation and neural canal decompression were treated with this technique. Patient both neurologically intact or with deficit with only single vertebral fractures are included. All patients underwent percutaneous fixation and decompression. The procedure is assessed for the effectiveness of the decompression and surgical events.

Results: Effective percutaneous fixation can be done in all patients. Effective dural and root decompression can be achieved. No infection or hardware related problems encountered. No deterioration of preoperative neurologic status. No blood transfusion given.

Conclusion: Percutaneous fixation of unstable fractures with minimal access decompression of neural canal is an effective and safe technique for treatment of single level unstable thoracolumbar fractures.

#ESA Abstracts 20170159
New Technique: Paravertebral Muscle Refashioning in Meningiomyelocele Repair
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Introduction: One of the most complications of meningiomyelocele surgical repair is early postoperative Cerebrospinal fluid leakage (CSF). Cystic back swelling due to prolonged sitting of children is an agonizing symptom of their parents. This study aims to assess the technique of paravertebral muscle refashioning in meningiomyelocele repair as a protective layer of opened spinal canal.

Methods: A prospective clinical trial study of 46 infants (25 boys and 21 girls) were included, a mean age (29.7±15.39 days), with meningomyelocele which was repaired surgically using paravertebral muscle refashioning technique in 18 infants (group I) while 28 infants without this technique (group II) at Benha University and Benha children Hospitals through the period from May 2013 to April 2017. The mean period of follow up was (18.27±2.78 months). Comparison was performed between two groups by analysis of early postoperative CSF subcutaneous swelling and late pulsatile cystic swelling of repaired dura.

Results: Forty six infants were studied, 25 boys (54.3%) and 21 girls (45.7%) with mean age 29.7±15.39 days (ranging from 1 to 90 days), and they were followed up with a mean of 18.27±2.78 months (ranging from 12 to 24 months). Early postoperative CSF leakage was absent in 72.8% of group I and 71.4% of group II which was statistically non significant between two techniques while late cystic back swelling was not detected in 88.9% of group I and only 32.1% of group II which was statistically significant (P<0.001).

Conclusion: Paravertebral muscle refashioning in meningiomyelocele repair is an effective technique for prevention of late cystic back swelling.

#ESA Abstracts 20170160
Epidemiological Characteristics of Spinal Cord Injury at Mansoura, Egypt: Prospective Hospital-based Study
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Introduction: Spinal cord injury (SCI) is one of the most devastating events in which lesions to the spinal cord cause motor impairments, sensory deficit, or autonomic nervous system dysfunction. SCI also affects negatively the patient’s physical, social, and psychological status. Incidence of SCI in developing countries was found to be 25.5 per million/year (95% CI: 21.7-29.4/million/year) [1]. Because of lack of management and rehabilitation, the combined mortality rate of people with SCI in low-middle-income countries was nearly 3 times more than of patients with SCI in high-income countries. Most studies show that the leading cause of injury was road traffic accidents. In Egypt, road traffic accidents account for 12,000 deaths/year, with high rate of 42 deaths /100000 population [5]. Because of the high association between road traffics and SCI, providing evidence about SCI in Egypt is crucial. However, there is no robust evidence regarding the prevalence of SCI in Egypt. This study aims t determine the epidemiological characteristics and prevalence of SCI in Egypt. These data can help physicians, community and policymakers to intervene to reduce SCI incidence, morbidity and mortality in our country.

Methods: A prospective population-based study will be carried out on patients with SCI admitted to the Emergency department at Mansoura University Hospital. During the period of hospitalization, the injury characteristics and patients demographical data were collected. Upon discharge, length of hospitalization, discharge mobility aid, discharge destination, bedsores, bowel/bladder problem, neurological status using the ASIA score, and the presence of any associated injuries were gathered. Two weeks of discharge, the authors evaluated any changes in the accommodation, mode of transportation, the cost of transportation affordability, neurological status, bedsores, and job status. At one month, six month and one year from discharge, authors continued to evaluate the continuation of education, employment status, bladder/ bowel problem, urinary tract infections, renal failure, depression status, sleep problems, sexual dysfunction, osteoporosis, skeletal muscle atrophy and any cardiovascular problem as deep vein thrombosis.
Results: As an ongoing project, till now we collected data from 17 patients. The demographic results demonstrated that (76.47%) of patients were males. The marital status varied from (64.71%) married, (29.41%) single and (5.88%) divorced. Level of educations was variable but (88.24%) of patients received some sort of education. The majority of patients (70.59%) were employed at the time of injury. The cause of injury to the majority was falls (52.94%) followed by car accidents (23.53%), motorcycle (11.76%), pedestrian, horse injury and other natural causes (5.88%). The spinal levels of injuries were more at the thoracolumbar region (52.94%) followed by the cervical region (47.06%). Majority of the cases had ASIA score of grades C or D (23.53%) for each followed by grade B (17.65 %) then grade A (11.76%). On discharge the majority of patients required discharging mobility aid and all of them were discharged to home. None of the patients were discharged to a rehabilitation center. Only one cases had bedsores at time of discharge. The mainstream of patients were concerned about the urinary problem and how to deal with the urinary catheter. At post injury follow-up, most of patients had an ambulance as a mode of transportation. However, fifty-percentage found that the cost of transport to the clinic visit was not affordable for them for revisit. Unfortunately, the majority of cases lost their job.

Conclusion: The present study demonstrated an overview of the epidemiological characteristics and prevalence of SCI patients that presented to Mansoura University Hospital. At our community, SCI patients faced huge amount of obstacles to be rehabilitated and reenrolled as a dependable persons again. Policymakers and community urgently needed to intervene and reduce SCI incidence, morbidity and mortality in Egypt.

#ESA Abstracts 20170161
Coccydynia: Evaluation of Local Injection for Pain Management
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Introduction: Retrospective study Introduction Coccydynia is not uncommon, many factors lead to pain in the coccygeal area. It is mostly caused by local trauma or after vaginal delivery in females yet many cases there is no clear etiology. Patients will seek help in the spine clinics for treatment. In this study we evaluate the success of local injection in treatment of these cases.

Methods: review of cases that came to the clinic with pain around the coccyx area over 2 years there were 75 patients. Nine if these patients turned out to have pilonidal sinus and transferred to general surgery clinic. Sixty six patients were included first treated by conservative treatment by NSAIDs, cushions and local gels and the failed cases were referred for local injection. 15 patients were treated over the period of the study by fluoroscopic guided local injection. The results were analyzed according to pain scores using visual analogue scale (VAS) and the Oswerty functional index (OSW) for functional outcomes.

Results: The fifteen patient who were included in the study were 10 females (66.67%) and 5 males (33.34%). Age ranged from 28 to 55 years average of 40.4. Three causes were identified trauma (46.67%) in addition to idiopathic and post delivery (26.67 %) each. The procedure was successful in 10 cases (66.67%), moderate success in 3 cases (20%) and failed to maintain the pain control in 2 cases (13.3%).

Conclusion: local injection under fluoroscopic guidance is a simple and effective way of treatment of coccydynia with high rate of success Key words coccydynia â€” fluoroscopy- steroid injection â€” pain management.

#ESA Abstracts 20170162
Dorsolumbar Parasitic Rachipagus Twin, Case Report and Literature Review
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Introduction: Siamese twins are joined by a part of their body at birth and the causes of the merger are often unknown. When the merger is on the spine it is rachipagus. It is an extremely rare and strange condition, and there are only a few documented cases in the worldwide literature. We present one additional case of parasitic rachipagus on the dorsolumbar level. This case report and review of the literature study aims to describe a girl with a parasitic twin attached to her lower back, combined with a spina bifida and a lipomyelomeningocele.

Methods: In September 2014, a female baby from North Sinai was referred to Suez Canal University Hospital. She was 1 month old and had an extra well developed parasitic twin attached to her back. She was surgically treated in the Neurosurgery and Pediatric Surgery Departments.

Results: A rare example of rachipagus conjoint parasitic twinning in a newborn girl is described. A lipomatous mass, a rudimentary intestinal loop with an attached atrophic pelvis and hind limb were found adherent to the dorsal vertebral arches of the autosite in the thoracolumbar region. Surgical excision of the parasitic twin, excision of the dorsal lipoma, repair of the cord and wound repair were done.

Conclusion: Parasitic rachipagus is a rare embryogenic malformation with a good prognosis on the autosite in the absence of associated congenital anomalies.

#ESA Abstracts 20170163
Phrenic Nerve is Safe Donor or not?
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Introduction: This review study aims is to clarify the safety of using the phrenic nerve is a donor in brachial plexus injured patients and its effect on the respiratory function of the patient and its recovery from the ventilator.

Methods: This study reviewed most of the available literature regarding harvesting the phrenic nerve in the surgical management of the brachial plexus injuries using the technique of nerve transfer. The MEDLINE and PubMed database were used to conduct a literature search for articles in the English language that were published between 1989 and 2017 with the following key words and phrases:“phrenic nerve, phrenic nerve transfer, traumatic brachial plexus management using phrenic nerve”. Related articles were also searched for relevant titles. The MEDLINE database produced ….. overlapping titles that were examined for relevance. The articles that appropriately fit the selection criteria were chosen. Only primary clinical articles discussing harvesting phrenic nerve and its transfer in brachial plexus surgery were included. Duplicate titles were eliminated. …. Articles were selected for review and selection.

Results: There is a debatable issue of using the phrenic nerve as a donor in brachial plexus injured patients. There are some authors prefer
keeping the phrenic nerve untouched as its affection on respiratory function post operatively and ventilator weaning process, while others may consider it as a mode of treatment.

Conclusion: Phrenic nerve is a vital nerve as its affection on respiratory function. Our team prefer not to touch the phrenic nerve.

#ESA Abstracts 20170164
Surgical Management and Outcome of Intramedullary Spinal Cord Tumour
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Introduction: Our aim is to assess the surgical management and evaluate factors associated with surgical outcome of intramedullary spinal cord tumors (IMSCT) in our hospitals.

Methods: Between June 2013 and June 2016, a retrospective study was conducted on consecutive 16 cases of intramedullary spinal cord tumors. All cases had signed consent, and MRI was done. The cases were surgically treated and evaluated pre and post operatively by MMS score (modified MC Cormick Scale). Appropriate statistical analysis was carried out.

Results: There were sixteen patients. Mean age was 50.4 years. Median follow up was 15 months. The most common histological origins was ependymoma (n=9, 56.25%). A cervical tumor was detected in eight cases, dorsal tumors in seven cases. Postoperatively the score was improved clinically but not statistically in seven cases cervical (87.5%) and four cases dorsal (57.1%). Ten cases were subjected to total resection. Postoperatively MMS showed improvement in all cases of total resection group (n=10, 100%), this was clinically and statistically significant on last follow up MMS. Less than four segments were involved in 9 cases, and 7 cases more than four segments. Postoperatively, 9 cases (100%) of less segments involved improved, while three patients (42.9%) of more than 4 segments were good. Low grade tumors as ependymoma was related to good surgical outcome while high grade tumors as ependyroma (100%) of less segments involved improved, while three patients (42.9%) in 9 cases, and 7 cases more than four segments. Postoperatively MMS showed improvement in all cases of total resection group (n=10, 100%), this was clinically and statistically significant on last follow up MMS. Less than four segments were involved in 9 cases, and 7 cases more than four segments. Postoperatively, 9 cases (100%) of less segments involved improved, while three patients (42.9%) of more than 4 segments were good. Low grade tumors as ependymoma was related to good surgical outcome while high grade tumors as ependymoma was related to good surgical outcome.

Conclusion: Total tumor resection with good preoperative clinical condition with tumor localization in cervical or conus region considered predictable for good neurological outcome. While Tumor localization on dorsal region with multi segmental extension and high grade of tumor pathology considered bad prognostic factors for neurological outcome.

#ESA Abstracts 20170165
Cervical Epidural Abscess: Case Report
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Introduction: Spinal epidural abscess is very irritating annoying problems that get the emergent proper decision is a must. Its presence within the cervical spine is life threatening issue because of the vital functions that can be compromised as a result from just the compression effect. So the concept of the bony decompression is essential in such cases.

Study design: To describe a rare presentation of spinal epidural abscess

Methods: A case report of an epidural abscess within the cervical spinal region.

Results: Case report of cervical epidural abscess in 56 year old male from Rosetta complained of acute onset of neck pain for about 2 months with progressive course of upper limbs weakness with no sphincter affection. No history of chronic illness nor previous neck and back surgery. Magnetic Resonance imaging of the cervical spine showing ventral cervical spinal cord compression by an epidural abscess extending from the apex of dens to the level of C5. Surgical intervention via anterior approach and corpectomy of the C4 and C5, iliac crest graft with plate and screws fixation was done. About 3 months after surgery, the patient was able to perform the usual lifestyle activities.

Conclusion: Diagnosing patient with epidural abscess within the cervical spine is somewhat is a difficult suspecting issue in patient with no history of chronic illness nor previous spine surgery, evacuation of the abscess and corpectomy of the friable pathological levels, fusion with iliac crest graft and fixation with plate and screws was a suitable option in management of this case.

Keywords: cervical, epidural abscess, corpectomy
By comparing preoperative and postoperative data in both Results:
were used.
Analogue Score (VAS), Oswestry Disability Index (ODI), and CT scan enrolled into 2 groups; 31 underwent Mini-invasive TLIF and 30 un-
mini-invasive TLIF to open TLIF in degenerative lumbar spine disease.

Methods: Eighteen patients had traumatic brachial plexus injury were operated by our team from January 2014 to December 2015. Data regarding the age, sex, causes of BPI, patterns of injury, surgical ap-
proaches, surgical procedures and recovery outcome were collected.
Results: All the patients were males with mean age 31 years, 72%
countered road traffic accidents (RTA), and 90% were because of
motorbike accidents. 60% showed upper BPI. Neurolysis, nerve
grafting and nerve transfer were the surgical procedures that were
followed. Functional recovery had been achieved in about 61% of the
study population.
Conclusion: we hope to give insight into the role of our team who deal
with the traumatic BPI while nearly no data had been published about
this type of BPI at Egypt.

#ESA Abstracts 20170168
Comparative Study Between Mini-invasive and Open Transforaminal Lumbar Interbody Fusion as Treatment in Patients with Degenerative Lumbar Spine
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Introduction: Spinal canal stenosis is a common degenerative condi-
tion of the lumbar spine, which - with aging - is seen with increasing
frequency. Spinal stenosis can lead to significant impairment in the
quality of life and the ability to perform activities of daily living. This
study aims to compare the functional and clinical outcomes of Mini-
invasive Transforaminal Lumbar Interbody Fusion (TLIF) with the
open TLIF in Degenerative lumbar spine.
Methods: Comparative study prospectively evaluates the results of
mini-invasive TLIF to open TLIF in degenerative lumbar spine disease.
Sixty one patients who completed their follow up program were
enrolled into 2 groups; 31 underwent Mini-invasive TLIF and 30 un-
derwent open TLIF. Follow up duration was 24 months. Visual
Analogue Score (VAS), Oswestry Disability Index (ODI), and CT scan
were used.
Results: By comparing preoperative and postoperative data in both
groups, significant improvement found in VAS and ODI in both groups.
Conclusion: Mini-invasive TLIF is as effective as open technique in the
final outcome with better results with regard to patient satisfaction,
length of hospital stay, time to mobilize and complication rates.

#ESA Abstracts 20170169
Posterior Vertebral Column Resection (PVCR) in Treatment of Vertebral Column Deformities
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Introduction: The ability to treat severe pediatric and adult spinal
deformities using simple osteotomies is mostly difficult. All-posterior
vertebral column resection (VCR) has obviated even the need for a
circumferential approach in primary and revision surgery. Although it
offers a great correction of the sagittal and coronal imbalance, but it is
technically demanding operation, and associated neurologic risks, and
significant morbidity. This study aims to present our experience that
support the benefit of using this technique.

Methods: In this retrospective study with clinical and radiological evalu-
ation of patient treated with posterior vertebral column resection,
Thirty eight consecutive cases of rigid spinal deformity treated with
VCR. The causes off deformity was congenital or idiopathic scoliosis,
kyphosis, tumors, and fracture spine. We used pedicle screws, cages or
grafts applied through the posterior approach, and intraoperative
spinal cord monitoring. Age ranged between 7-70 years old. 23 were
females and 15 were males. The follow up of the patients was 3.5 years
in average.
Results: All the patients achieved significant correction of their
deformity. The total complication rate was 35%. With root injury was
the most common 13%.
Conclusion: PVCR is technically demanding technique. It’s a feasible
“last resort” operation in appropriately selected patients. Spinal cord
monitoring (specifically NMEP) is mandatory to prevent neurologic
complications. The dramatic improvements seen with this technique
make it worth learning and practicing.

#ESA Abstracts 20170170
Anterior Subaxial Cervical Spine Fusion Using a Plate with a Single Screw per Vertebral Body
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Introduction: The aim of anterior cervical surgery is always good vertebr
spacing and fusion after good decompression. There is an evolutu
in this surgery to achieve those goals, and technical refine
ment have been done to the anterior cervical discectomy and fusion
(ACDF) procedure. This including trying different grafts type to
improve fusion. In addition, fixation with plate and crews promote
healing by rigid immobilization. This study aims to the revival of using
a plate with a single screw per vertebral body technique in anterior sub
axial cervical spine fusion.
Methods: Retrospective study with clinical and radiological evaluatu
of patient treated with anterior cervical discectomy and fusion with
plate with a single screw per vertebral body (ACDFP). Forty seven
consecutive cases affected by symptomatic cervical disc herniation or
spondylosis underwent cervical anterior fusion ACDFP. Technique
was applied on 32 patients (68%) with single level disc disease, while 15
patients (32%) were double-level. We used PEEK cages filled with
autogenous bone, then fixed with plate with single screw per vertebra.
Age ranged between 32-74 years old. 26 were males and 22 were fe
males. The mean follow up of the patients was 13.8 months. Post-
operative clinical evaluation was based Visual Analog Scale.
Results: All the patients achieved significant improvement of their
radicular pain. The VAS improved from 9.32±0.69 pre-operative, to
1.5±1.5. The total complication rate was 36%, including numbness,
dysphagia, and neck pain.
Conclusion: A single screw per vertebral body plate system appears to
be safe, feasible, and stable system, in both single and double level
degenerative disc in subaxial cervical spine surgical treatment.

#ESA Abstracts 20170171
Comparative Study between Surgical and Conservative Management of Post-injection Sciatic Nerve Injury in Children
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Introduction: Intramuscular injection in the gluteal region represents one of the most important causes of sciatic nerve palsy. The main
manifestation of most patients is foot drop. This study aims to evaluate
the role of surgical exploration of post injection sciatic nerve injury in
comparative with the usual conservative treatment in children.
Methods: this study included 20 children patients (1.5-8 years) with post injection sciatic nerve injury diagnosed by history, clinical, electrophysiological, functional assessment and followed for 1 year after. Divided into two groups; group I (ten patients) underwent surgical exploration and group II (ten patients) treated conservatively.

Results: group I underwent surgical exploration, with mean age (4.20 ± 1.798), male: female ratio was 2.33:1 and group II treated conservatively with mean age (4.85 ± 2.160), male: female ratio was 4:1. Unstable gait, vasomotor changes, sensory loss and foot drop were the commonest manifestations in the 2 groups; right foot drop was more common than the left one. Antibiotics and analgesics were the commonest causative agents of nerve injury in the studied children. EMG were done for all cases at initial presentation, revealed sciatic nerve injury with complete degeneration of common peroneal nerve then repeated at 3, 6 and 12 months shown complete improvement in 8 cases, partial improvement in one case and no improvement in one case in group I but in group II complete improvement in 4 cases and no improvement in 6 cases with significant difference between the two groups (P < 0.05).

Conclusion: surgical exploration of post injection sciatic nerve injury in children is feasible and effective management in comparative to conservative methods.

#ESA Abstracts 20170172
Index Level Fixation in Thoracolumbar Fracture: A Comparative Study Between Long Segment Fixation and Short Segment with Index Level Fixation
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Introduction: Thoracolumbar fractures are commonly managed by posterior pedicle screw fixation. Controversy remains about the number of levels involved in the fixation as the stability of the short segment fixation remains questionable. Recently, it has been shown that application of intermediate screw in the fractured vertebra improves the biomechanical stability of the short segment construct. The aim of this prospective cohort controlled study is to compare the outcome of long segment fixation (LSF) versus short segment fixation with index level screws (SSFIS) in the management of the thoracolumbar burst fractures.

Methods: Fifty patients with thoracolumbar burst fracture (T11-L2) type A3 and A4 AOSpine classification with a Thoracolumbar Injury Classification and Severity (TLICS) Scale of more than 4 were treated between 2009 and 2014 with posterior pedicle screw fixation. The patients were divided into two groups according to the number of instrumented levels. Group 1 included 25 patients treated with LSF (two levels above and two levels below the fractured level) while group 2 included 25 patients treated by SSFIS (one level above and one level below with index screws in the fractured level). The patients were evaluated for local kyphotic angle (LKA) correction and maintenance, anterior vertebral body height (AVH) compression, visual analogue scale (VAS) for back pain and treatment related complications. Construct failure was defined as screw pullout or instrument breakage.

Results: The two groups were similar as regard to age, sex, fractured levels, fracture type, TLICS score, pre-operative local kyphotic angle and anterior vertebral body height compression. Post-operative correction of the local vertebral compression assessed with LKA and AVH significantly improved in both groups compared to the pre-operative degree while there was no significant difference in the two groups in early post-operative or follow up regarding the degree of correction and its maintenance. No construct failure or major treatment related complication were encountered in both groups with significant reduction of VAS in both groups between early post-operative and late follow up.

Conclusion: Index level screw applied in the fractured vertebra in management of thoracolumbar burst fracture improves the correction and maintenance of local kyphosis in short segment fixation similar to long segment construct with saving vertebral motion levels from being fixed. More randomized controlled and multicenter studies are needed to support these findings.