INTRODUCTION

Fracture spine in pregnancy is uncommon. They occur following traumatic event; however, relative osteoporosis of pregnancy is found to be associated. There are only few reports which discuss the management of thoraco-lumbar spine fracture in pregnancy [3–8]. We report a case of 26-week pregnancy with traumatic fracture of twelfth thoracic vertebra (T12) with paraplegia, which was operated in prone position on a Toronto frame.

Case History

A 28-year-old female with 26 weeks of gestation (G3P2L2) had a history of fall from ladder, came to casualty after referral from other primary care center of a remote place, presenting after 36 h with severe back pain and inability to move both lower limbs since fall. She had no history vaginal bleeding, pain in abdomen, or loss of consciousness. Pulse was 88/min, blood pressure—128/76 mmhg. Her fundal height on examination was approximately 26 weeks, fetal heart rate—156/min. Per vaginal examination was normal. Spine examination revealed tenderness at dorso-lumbar junction. Neurologically patient had total spinal cord injury below L1 segment, Knee and ankle reflexes were exaggerated. Urgent ultrasound (USG) of abdomen showed normal fetus with no other organ injury. After taking consent from patient, plain radiograph of thoraco-lumbar spine was taken. X-ray showed anterior wedging of T12 vertebra (Fig. 1a). MRI showed burst fracture of T12 vertebra with cord compression (Fig. 1b). A decision of posterior surgical decompression was taken after explaining the risk of maternal and fetal complications. Toronto frame was assembled and fixed to the radiolucent operating table. Patient was placed in a prone position on Toronto frame (Fig. 2), and height of the frame was adjusted so as the abdomen remained free (Fig. 3). The major advantage of this frame was minimal pressure on abdomen or pelvis, while the patient was supported in prone position by her shoulder and iliac crest. Before procedure FHS was assessed with handheld Doppler and intraoperative monitoring of fetal heart sounds was done by cardiotocogram machine with FHS belt.
of immobilization like deep venous thrombosis (pregnancy itself is a major risk factor for deep venous thrombosis) and pulmonary complications. An individualized approach is thus recommended in managing spinal surgery in preg-nancy. It is always prudent to postpone the surgery until after delivery if the patient is near term; however, in earlier weeks of pregnancy, unstable spinal column injury and incomplete neurological deficit are definite indications to contemplate the surgery.

The surgical approach and positioning for these thoraco-lumbar fractures in pregnancy is also a debatable issue. Anterior approach has advantage of avoiding pressure on gravid uterus. However, in later weeks of gestation where gravid uterus reaches up to xiphisternum, approaching the thoraco-lumbar spine is difficult by anterior approach. Posterior approach has disadvantages of pressure on gravid uterus due to positioning and need of radiation exposure for pedicular screw fixation. Retlon et al. [10] described a specialized frame (Toronto frame) for reducing blood loss in scoliosis surgery in prone position by relieving the extrinsic pressure on IVC. The frame consists of four supports with 45° inward tilt, which are arranged in two V-shaped pairs supporting the lateral aspects of the upper thoracic cage and antero-lateral aspects of the pelvic girdle between the iliac crests and the greater trochanters. With suitable adjustment, this frame gives adequate support and prevents extrinsic pressure on abdomen. Utilization of the same frame in our patient had worked to our adequate support and prevents extrinsic pressure on abdomen.

The hazardous effect radiation exposure as mentioned earlier is a peculiar concern in stabilizing spinal fractures by posterior approach. The potential biological effects of in utero radiation exposure of a developing fetus include prenatal death, intrauterine growth restriction, small head size, mental retardation, organ malformation, and childhood cancer [11]. The gestational age and the level of absorbed dose are important factors in occurrence of these effects. Most of the teratogenic effects of radiation occur because of exposure during the first trimester (period of organogenesis). From the 16th to the 25th week, very large doses of radiation are required to cause fetal malformations because of reduced radio sensitivity and after the 25th week major fetal malformations and functional anomalies highly improbable [12]. In our patient, because of gestational age of 26 weeks, we could use fluoroscopy for pedicular screw fixation. Nevertheless, care was taken to keep radiation exposure to minimum possible level.

**Conclusion**

- spinal fractures and cord injury in pregnancy are complex issue. The treatment plan should be individualized by weighing the risk and benefits of conservative against the surgical management. A specialized frame described by Retlon et al. [10] can be utilized to avoid pressure on gravid uterus in case posterior surgery in contemplate.
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<td>Paonessa [4]</td>
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<td>RTA</td>
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<td>ASIA A at D8</td>
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<td>Unconditional rehabilitation, presented at 34 weeks with SRCRM, elective CS for failure of labor</td>
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<tr>
<td>Tashnev [1]</td>
<td>T12-L1</td>
<td>7 month</td>
<td>20</td>
<td>RTA</td>
<td>No</td>
<td>–</td>
<td>Bed rest, mild spinal extension on pillows till delivery</td>
<td>C-S</td>
<td>Following pregnancy presented with, increasing back pain and intermittent paresis, required postinstrumentation and fusion</td>
<td></td>
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<tr>
<td>Tanchev P, Dikov D, Novkov H [2]</td>
<td>C6–7</td>
<td>26 weeks</td>
<td>30</td>
<td>RTA</td>
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<td>Lenarz [1]</td>
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<td>Anterior decompression by retroperitonal approach with anterior fixation from D1-L1 along with amber hyper-extension of cage and BG. Was mobilized without brace. Delivered by CS</td>
<td>Complete Recovery of power and bowel bladder continence</td>
<td>The author considered anterior approach was the best option to provide safe positioning of the mother</td>
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<td>Posterior cervical spinal fusion</td>
<td>Unconditional postoperative course and full recovery</td>
<td>Aggressive and timely surgical and anaesthetic management may be life saving.</td>
<td>–</td>
</tr>
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</table>

**REFERENCES**

4. Snuka [5] D5.8 19 weeks 24 years RTA Back pain No – Anterior thoracoscopic-assisted reduction and stabilization @ D8 level
5. Glison [6] C6–7 subluxation 26 weeks 30 RTA No Anterior thoracoscopic-assisted reduction and stabilization @ D8 level