ABSTRACT
Orbital fractures accounts for 10-25% of all facial fractures. Orbital floor and rim fractures can be managed by transconjunctival and transcutaneous approaches. Transcutaneous approaches are subciliary, subtarsal and infraorbital approaches. In our unit, we used the subtarsal approach for orbital floor and rim fractures and analysed the benefits and outcome.

KEYWORDS
Subtarsal, Orbital Septum, Preseptal, Orbital Floor, Orbital Rim

INTRODUCTION
Orbital fractures accounts for 10-25% [1,2] of all facial fractures. Orbital fractures are commonly due to assault, road traffic accident, sports related injuries in young individuals and following fall in elderly individuals.

Most common location for orbital fracture is orbital floor 48% [3], followed by medial wall of the orbit 25%[3].Orbital floor and rim fractures can be managed by transconjunctival and transcutaneous approaches. The selection of an approach depends on factors like nature of injury, surgeons expertise, operating time, associated injuries, age, gender, scarring, complications and aesthetic outcome.

SURGICAL TECHNIQUE:
Subtarsal approach was first described by John Converse in 1960[4]. It is also called as lower lid skin crease incision. The incision is marked 5-7mm below the lid margin along the inferior border of tarsal plate in the natural skin crease of lower eyelid. (Fig. 1)

Incision starts medially and proceeds in a cranio-caudal direction. After incising the skin the orbicularis oculi muscle is split open laterally after lifting from the orbital septum. Orbicularis oculi is undermined in the pre-septal plane. The muscle is divided from lateral to medial direction without injuring the orbital septum. Then the dissection is carried out inferiorly in the sub- orbicular preseptal plane upto the infraorbital bony margin. (Fig. 2)

After reaching the orbital rim, the periosteum is incised starting laterally at a level below the rim and dissection is continued in the superperiosteal plane. After the procedure is completed, wound is closed in layers starting from periosteum, muscle and skin. (Fig. 3,4)

Fig. 1 – Pre-operative marking of the subtarsal incision
Fig. 2 – Plating done after exposure of the infraorbital rim
Fig. 3 – Immediate post operative picture
Fig. 4 – Late post operative picture showing NEGLIGIBLE SCAR
In order to prevent vertical scar contracture, ‘Frost sutures’ can be applied to the lower eyelid along the lid margin and taped to the forehead.

MATERIALS AND METHODS
The subtarsal approach was employed for patients admitted with faciomaxillary trauma with orbital fractures involving floor and rim, between November 2018 to October 2019. Per operative and post operative analysis of the subtarsal approach was done. A total of 43 patients were operated using subtarsal approach during the above period. 31 patients had orbital rim fractures alone with no involvement of floor and 12 patients had floor with rim fractures. Among the 43 patients, 42 were male patients and 1 was a female patient. The mode of injury was road traffic accident in 42 patients and assault in one male patient.
RESULTS
In our study, the single major cause of orbital injury was road traffic accident (98%), predominantly male patients. 72% of the patients had isolated orbital rim fractures whereas the remaining 28% had floor with rim fractures. There were no ectropion in any of the patients in the post operative period. Scar in the lower eyelid were well settled in all the patients with no hypertrophic scarring. Aesthetic outcome of the scar was good as the scar got camouflaged in the lower eyelid skin crease with good patient satisfaction. Significant lower eyelid edema was noted in three patients postoperatively which settled conservatively.

DISCUSSION
Transcutaneous approaches for the management of orbital floor and orbital rim fractures are subciliary, subtarsal and infraorbital approaches. The subciliary approach was first described by Converse in 1944[5,6,7]. The subciliary incision is made just below the lid margin and it requires delicate tissue handling and meticulous dissection which is time consuming. Further incidence of post-operative complications like ectropion of lower lid, scarring is quite high following subciliary approach.[8] Hence it requires an expert surgeon for this approach and may not be suitable for a beginner. Infraorbital approach though easy and straight forward with fewer complications and lesser operating time, it is not recommended due to poor scar placement and aesthetic outcome.[9,10] The subtarsal approach strikes a balance between the above two approaches for orbital floor and rim fractures. The incision is placed well below the lid margin and dissection is done in the preseptal suborbicularis plane with adequate muscle support. Hence there is negligible risk of post-operative ectropion of the lower eyelid.[11] In terms of dissection, the subtarsal approach is quite straight forward, hence it is not time consuming procedure when compared to subciliary approach. When incision is placed properly in the lower eyelid along the natural skin crease, it produces a fine inconspicuous scar when the healing is complete, which gets hidden in the skin crease with excellent aesthetic outcome. The only poor outcome after subtarsal approach is post operative edema of lower lid if the muscle dissection is not done meticulously and in late presentations due to scarring of the muscle.[12]

CONCLUSION
The subtarsal incision is simple, safe, with low complication rates. Hence, we recommend the subtarsal approach as a standard approach for all orbital floor and rim fractures, which can be employed by the least experienced orbital surgeon.

REFERENCES