Commentary: Modified sewing machine technique: An innovative method for the management of iridodialysis, iris coloboma, and scleral fixation of intraocular lenses

Iridodialysis refers to the tearing or localized separation of iris from its ciliary body attachment. Iridodialysis is typically caused when the eye experiences a blunt trauma or suffers from a penetrating eye injury. It can also be caused as a result of iatrogenic complications from intraocular surgery.[1,2] It has reportedly also occurred due to fireworks, water balloons, bottles opened under pressure, elastic bungee cords, water jets, airbag deployments, and boxing.[2-5]

In case iridodialysis is tiny, it is not a cause for concern from either cosmetic or visual point of view. However, in case the separation is major, it can result in monocular diplopia because of the double pupil. These major iridodialyses might have polycoria or corectopia and experience photophobia, glare, or monocular diplopia.[6] In these major cases, a surgical repair of the iridodialysis is in order. Typically, this surgical repair is carried out using 10-0 prolene suture to attach the iris avulsion base to ciliary body junction and scleral spur. The iridodialysis operative treatment was initially conducted in 1892 by Crochet, who amended the iridencleisis operation. There have been numerous other procedures that have been described for the repair of iridodialysis from Goldfeder, in 1932, highlighted a method in which a small keratome incision was made; the margin of iris was fixed with a tiny hook and fibers were inserted in the wound.[7] A hang-back procedure was described by Sengül and Özmen which tied the suture while the knot stays in anterior chamber.[8] Utilizing scleral pocket through Mac cannel sutures, *ab externo* was another iridodialysis repair technique highlighted by Hoffman *et al*.[9]

However, recently, another technique known as sewing machine technique (SMT) has been reported in 2014 by Kumar, which was presented in APACRS conference Singapore 2013 and published in the *Delhi Journal of Ophthalmology*.[10] This technique utilizes a method which is similar to the workings of a sewing machine to repair iris dialysis.[10] In this method of repair, loops are made similar to that created by a sewing machine as it stitches. We have used the SMT in two cases to repair iridodialysis after roadside accident with cosmetic excellent results (unpublished data).

The SMT utilizes the suture loop principle of sewing machines by utilizing hypodermic needle which is 26G long prethreaded with 10/0 prolene suture to offer minimum invasive repair for iris dialysis in the closed chamber. The modified SMT (MSMT) reported in the current issue of *Indian Journal of Ophthalmology* utilizes hypodermic dental needle which is 30G long, 10/0 prolene suture, and scleral tunnel with partial thickness to create one knot in the procedure, making it a simpler iridodialysis repair process.

MSMT has reduced the learning curve and has proved to be cost-effective while also drastically decreasing the patients' discomfort. The best thing about this technique is that this procedure can be utilized to handle more clinical problems such as scleral-fixated intraocular lens (IOL), Cionni ring fixation, IOL relocation, and iris coloboma repair.

In the present study published in the current issue of *IJO*, eight patients underwent the MSMT.[11] Of these 8 patients, five patients had surgical complications and three patients experienced trauma which resulted in iridodialysis. The results showed that all the patients who went through MSMT did well with good cosmesis, visual recovery, as well as good structural recovery. The authors used MSMT is three cases of iris coloboma, three cases subluxated IOL cases undergone IOL relocation, one case of posttraumatic subluxated cataract undergone Cionni ring fixation, and five cases undergone scleral-fixated IOL.

One of the patients also went through cataract extraction with IOL implantation as well as the repair of iris dialysis through MSMT in a single sitting. Postoperatively, there was pupillary peaking; hence, the MSMT was used once again for iris repair, a week after the IOL implantation. This was successfully done without disturbing the IOL, and a round pupil was achieved.

MSMT can be utilized for the repair of iridodialysis and can also be used in other surgical procedures. This procedure is easier to implement, minimally invasive, innovative and is cost-effective as well. Since it is a simple and easy process, an average cataract surgeon can also learn and execute this procedure when needed.

MSMT can also be an effective means of tying Cionni ring in cases of zonular dialysis. This study also highlights some of the difficulties encountered in this surgical repair. The difficulties included peaking of pupil in one patient, scleral entry site hemorrhage, and difficulty in inserting the suture in hypodermic needle. However, these problems are minor and were properly addressed during the procedure. The research highlighted the demerits of the procedure as well but also offered solutions which can be effective if precautions are taken beforehand. In summary, the authors should be congratulated for describing this innovative method of iris repair that is not only minimally invasive but is also economical, simple, and easy which can be easily learned by cataract surgeons.

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