Mini-Perforated Craniotomy with Subperiosteal Drainage

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Chronic subdural hematoma (CSDH) is an intriguing entity and many surgical options are available.[1,2] The article by Sirinoglu et al[3] describes a novel technique of mini-perforated craniotomy with subperiosteal drainage for CSDH evacuation. Mini-perforated craniotomy with subperiosteal drain is used in recurrent CSDH, mixed density of hematoma, and in multiple septal appearances. This technique involves the creation of a mini-craniotomy, cruciate dural opening, evacuation of the hematoma, multiple small perforations in the bone flap, securing it with mini-plates, and closure under subperiosteal drainage. It is particularly designed for the membranous CSDH. It is safe and effective in the preliminary study of 10 patients, and we congratulate the authors for bringing out their technique.

The CSDH is of various types. It might have multiple septa, organized clots, and thick membranes.[1] These variations may preclude complete evacuation of the hematoma using the traditional burr hole or twist drill craniostomy, which may lead to residuals and recurrences. The described technique is helpful in this regard. Suction drainage is another vital adjunct to reduce the residuals, pneumocephalus, and recurrences of CSDH.[4,5] A subperiosteal/subgaleal drainage is safer than a subdural drain, especially to avoid bleeding from vascular outer membrane and infection. The idea of multiple holes in the mini-craniotomy flap to allow drainage of the blood and air while preserving the cosmesis is also commendable. Multiple holes can increase the efficiency of suction drain in removal of blood and air from the hematoma cavity. However, it may adversely affect vascularity of bone flap, which needs to be seen in large study.

Though authors have advocated their technique for the removal of a membranous clot by better visualization of surgical site using mini-craniotomy compared with burr hole, it may be challenging to remove septa, membranes, and solid or organized clots that are hidden far from the mini-craniotomy site. The endoscopic technique of CSDH evacuation is an alternate technique that allows the excision of thick membranes, cutting of septa, and the ability to suck out even solid/semisolid clots.[6,7] The mini-craniotomy site in the endoscopic technique is at the most anterior/posterior, lateral and curving part of the hematoma to allow direct and complete access using an endoscope. The procedure is performed under direct endoscopic vision and thus all variations in the CSDH can be safely and effectively dealt with. Though rarely encountered, the endoscopic technique can also tackle any intraoperative subdural bleeding.

There are, however, few limitations to the article, which can be improved in future studies. First, the authors missed mentioning the dimensions of mini-craniotomy and holes on the craniotomy flap. Small holes will lead to their blockage, and large holes may lead to cosmetic issues. This is important to get their work replicated by other surgeons. Second, we assume that the dura though tied to the bone flap was left open. This is also critical to allow the drainage of the residual clots and air. Number of patients and follow-up were also short.

This novel technique of mini-perforated craniotomy with subperiosteal drainage may be better than the burr hole or twist drill craniostomy techniques in breaking the membranes and taking out clots. It may act as a bridge between the effectiveness of a large craniotomy and the cosmesis of a burr hole. The mini-perforated craniotomy with subperiosteal drainage looks to be a promising technique for CSDH evacuation; however, a large well-designed randomized controlled trial between it and the

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existing techniques especially endoscopic technique will establish this endeavor.

Conflict of Interest
None declared.

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