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Title: 'New concepts of Inguinal canal physiology in perspective with todays trends and a new technique'

Background: Current inguinal hernia operations like mesh repairs are generally based on anatomical considerations. Failures of such operations are due to lack of consideration of physiological aspects. Many patients with inguinal hernia are cured as a result of current techniques of operation, though factors that are said to prevent hernia formation are not restored. Therefore, the surgical physiology of inguinal canal needs to be reconsidered.

Methods: A retrospective study is describer of 200 patients operated on for inguinal hernia under local anaesthesia by the author's technique of inguinal hernia repair. Undetached strip of the external oblique aponeurosis (EOA) is sutured in place of mesh between the muscle arch and inguinal ligament.

Results: The external oblique aponeurosis was fairly strong and dynamic and the posterior inguinal wall was weak and a-dynamic in all patients. Aponeurotic extensions from the transversus abdominis aponeurotic arch were absent in the posterior wall in all patients. The absent aponeurotic extensions in the posterior wall were replaced with an aponeurotic strip of the EOA, to give a strong and physiologically dynamic posterior wall in all patients. This is the main primary factor that prevents hernia formation in normal individuals or recurrence of hernia after surgery.

Conclusions: A physiologically dynamic and strong posterior inguinal wall and the shielding and compression action of the muscles and aponeuroses around the inguinal canal are important factors that prevent hernia formation or hernia recurrence after repair. In addition, the squeezing and plugging action of the cremasteric muscle and binding effect of the strong cremasteric fascia, also play an important role in the prevention of hernia. Obliquity of inguinal canal or shutter mechanism or such other factors that are said to prevent hernia formation, described in text books, are not real factors that prevent hernia formation. Therefore, the author's new technique of inguinal hernia repair which is based on those new concepts of inguinal canal physiology, gives radical cure to the patients from hernia.

Keywords: Inguinal hernia repair, physiology, inguinal canal, protective mechanism, new technique