

Muthusamy Sub-Tenon's Cannula: An Untold Story

Dear Sir / Madam,

Sub-Tenon's block was first described by Turnbull in 1884¹ and later by Swan in 1956.² During that period retrobulbar anaesthesia was the preferred technique of local anaesthesia for ocular surgery. The report of the joint working party on anaesthesia in ophthalmic surgery by the Royal College of Ophthalmologist (March 1993)³ has shown that life-threatening complications occurred in 1:750 anaesthetics administered and serious complications occurred in 1:360 cases following retrobulbar anaesthesia. So, again in early 1990's, Sub-Tenon's anaesthesia was revisited by many workers including Hansen⁴ and Stevens.⁵ During that time, I designed a modified Sub-Tenon's cannula for the placement of anaesthetic solution into the Sub-Tenon's space. In this letter, I would like to share with the readers, two interesting

inciting events which led to the birth of my cannula, Muthusamy Sub-Tenon's cannula,⁶ Figure 1.

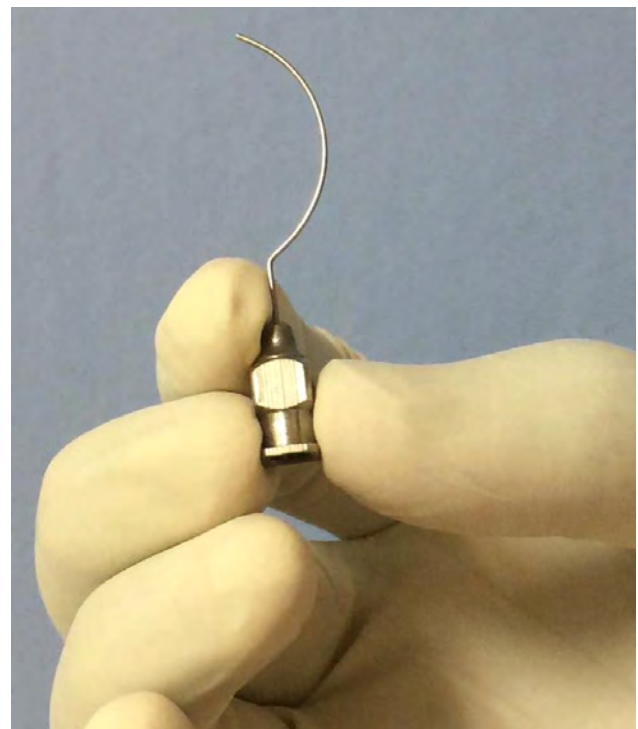


Figure 1. Muthusamy Sub-Tenon cannula

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One fine day, I was examining my close friend, who was having bilateral cataract. He had a vision better than 6/18 in one eye and a vision of counting fingers in the other eye. He requested me to operate the eye with the poorer vision that was bothering him.

His son who was studying medicine in Manchester was back home for his holiday and was eager to watch the operation.

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Normally, I encourage patient's relatives/friends to be in the operation theater during surgery, if they are insisting to see operation because it is very reassuring to the patient. The onlookers always go back enthralled at the skill needed to perform a cataract surgery and they become a mouth piece whenever they come across a patient with cataract.

So during surgery, I was explaining every step of the surgery to his Son and he was very much impressed. After I finished the surgery, I told to his Son, "In cataract surgery, there is only a very narrow line between perfection and disaster. As you have seen, this surgery was perfect".

The eye was padded for the night. Next day morning, in the presence of his Son, I removed eye pad of my friend and instructed him to read the Snellen's chart. I was shocked to hear his words, "Muthu, I can't see anything". I assured him, "Don't worry. Relax a little while and you will be able to see". When I asked him to read again he, very worriedly said, "Muthu, I can't see anything". I quickly took a bright torch and shined the light into the eye and asked him, "Can you see the light, he said a soft "No". I knew exactly what had happen. The retrobulbar injection has damaged the central retinal artery and caused central retinal artery occlusion. Damage to the central retinal artery is extremely scary and is a drastic complication. Although I was devastated, I maintained my professional cool.

I knew for sure the retro bulbar injection needle has injured the central retinal artery and the vision was irrecoverable. The only consolation to me was that his Son had witnessed the whole surgery.

During that time, ophthalmologists all over the world were looking for a better and safer alternative. There were already a few Sub-Tenon's cannulas available but each one of them had some limitations. I did hours of research and read the history of ophthalmic surgery from the time of the first cataract surgery done by Sushruta: the father of Indian surgery and ophthalmology in the 6th Century BC to the advent of pre-bulbar anaesthesia.

I spent many grueling hours and finally I designed and developed a Sub-Tenon's cannula on my own. I sent them to all leading ophthalmology institutions in the world and received letters of appreciation from many corners.

The second inciting event which helped me to produce the cannula in larger number was a letter from Professor David Guyton, Professor of Pediatric Ophthalmology, The Johns Hopkins Institute. He praised my cannula saying the curve and the length is perfect and congratulated my effort. I felt enthused and exhilarated. So I wrote a letter thanking him and volunteered to send him a few of my cannula to try and assess. To my dismay, he replied that what he sent was an "ANECTODAL PRAISE". I knew exactly what it meant.

I was the student with the most powerful vocabulary in my class! It meant, "praise and inspirational words not based on facts or careful study, unreliable, unscientific, entrust worthy". I did not expect a letter of this sort from a man of his standing and caliber. I wrote a reply letter. I read and re-read that letter about 6 times to make sure he cannot find fault with the views that I expressed. I felt that he will ignore it. But, to my surprise, I received again a letter from him, in which he apologized for his faux pas, and constructively suggested that my cannula was excellent but it was crude and he also wrote that if I can get it manufactured to perfection, he would use and promote it. Then I immediately got it manufactured and sent it to him. He supported it. The rest was history..... birth of Muthusamy's Sub-Tenon cannula.

By the way, David Guyton is the son of the author who wrote the famous book Guyton Textbook of Medical Physiology. You might have all read it.

In the next issue, I will be writing to you all about how the cannula got popularized and manufactured⁷ without my knowledge, how I came to know about it later and I will also be describing the cannula in detail.

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Conflicts of interest

There are no conflicts of interest.

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