"Human history in essence is the history of ideas," H. G. Wells

In the first edition of the new section of IJO, Tales of Yore, we delve into the life and contributions of Dr Raynold N. Berke, a gifted surgeon, a pioneer of ptosis surgeries and a man with extraordinary ideas, who chose to carve out new paths while following the footsteps of those before him.

Dr Raynold N. Berke was born on November 27, 1901 in Minnesota. He graduated from the medical school of the University of Minnesota in 1928 and was a Fellow in Ophthalmology at the Mayo Clinic from 1929-1930. He completed his residency at the Will’s Eye Hospital in Philadelphia in 1931. The following year he set up his private practice in Hackensack, New Jersey and was appointed a clinical assistant in Ophthalmology at Bellevue and the New York Eye and Ear Infirmary. In 1933, he moved to the new Eye Institute of the Presbyterian Hospital and was also the Instructor in Ophthalmology at Columbia University. For the next 30 years that he was there, he produced some of his most important works. He then moved to California as acting Professor of Surgery (Ophthalmology) at Stanford University in Palo Alto till he retired in 1976. He was one of the charter fellows of ASOPRS when it was founded in 1969, along with Crowell Beard.

Dr Berke developed a particular interest in blepharoptosis and made significant contributions, becoming one of the leading authorities on this subject. As one goes through his various papers, one thing that strikes immediately is the analysis of the existing techniques from every angle, before proposing a new concept or procedure. This was equally judged for the advantages, drawbacks, complications faced and their management or prevention. There is a level of simplicity and clarity in his writing which can only be achieved when someone has conducted the study in the most logical sequence and has well-formed concepts and conclusions in his own mind.

In 1945, he explained the possible reasons for failure of ptosis surgeries described by Bowman, Wolff, Wheeler and Blaskovics. He carried out the surgeries described by them on cadavers and studied the histopathology of the excised tissues.

He concluded that the Muller and Levator palpebrae superior is (LPS) were invariably dissected and excised together. Thus, all the surgeries described earlier, did not differentiate between the smooth and the striated muscles and it is possible that what they described as the LPS was in fact the Muller’s muscle. He attributed failure to correct ptosis after levator resection to inherent weakness of the LPS muscle since the tensile strength, fibrosis, degeneration or congenital anomalies of structure could not be determined by clinical tests. He went on to state that levator resection should be undertaken only when the muscle is not completely paralyzed, which was different from what Blaskovics believed.

He described a surgery for ptosis correction using the superior rectus (SR) muscle in 1949, which he called the modification of the Motais procedure. He recommended the surgery only when resection of levator was contraindicated and for complete ptosis (with no levator function) with normal or weak SR. It was carried out by both a lid crease incision to expose the tarsus and a conjunctival incision to expose the SR. A part of the SR (5-10 mm) was also excised and the remaining muscle tongue was sutured to the anterior surface of tarsus and skin. This procedure had several advantages over the classic Motais’ surgery. It prevented hypotropia from weakness of SR by simultaneously strengthening it. Slippage of the transplanted muscle tongue was less. A smooth upper lid curve with good lid crease was produced, laying down the foundations of creating a dynamic lid crease followed today. The eyelid also moved in synchrony with the globe. While this surgery is no longer practiced, studying the technique is very helpful in understanding the problems with the previously described techniques and the principles which guided their evolution to the present forms.

He devised the ptosis clamp in 1952, that now goes by his name, for holding the levator muscle during levator resection. [Fig. 1]

In the same year, he presented a modification of the Blaskovics procedure. It was essentially a simpler method of levator resection by the posterior approach. He emphasized the importance and technique of freeing the levator completely from its attachments— the conjunctiva and tenon’s below, the bony orbits via the lateral and medial horn, and the pulley of the superior oblique and the orbital septum above, to allow a sufficient amount of levator to be resected. A single set of sutures was used to attach the levator to tissues of the upper lid and a Frost suture from the lower lid was placed to protect the cornea, which was safer than pulling the upper lid down. These finer points enhanced the outcome and reduced the complications.

Berke published his results of resection of levator muscle through the skin incision for congenital ptosis in 1959. The surgery was technically as described by Johnson and Leahey. He concluded that the external approach was simpler, gave greater amount correction and produced less undercorrection for congenital ptosis when compared to the conjunctival approach. It is in this paper that he elucidates the need to over or undercorrect the ptosis on table based on the preoperative levator function. When the preoperative LPS action is 6-8mm, the ptosis should be fully corrected. For good LPS (10-12mm), an undercorrection of 2-3mm and for poor LPS action (<4mm), an overcorrection by 2-3mm was found to achieve good postoperative outcome.
He also described the method of transconjunctival sutureless levator recession practiced today for the treatment of postoperative overcorrection.

Apart from ptosis, he also made breakthroughs in strabismus with his landmark article on factors affecting the cure of esotropia and chapter on management of hypertropia. He also described the surgery for weakening of superior oblique by intra-sheath tenotomy.[10]

In orbit surgery, he gave a simplified approach to lateral orbitotomy with better exposure and improved cosmesis [Fig. 2].[11] This surgical technique was lauded by several ophthalmologist including Benedict, Reese, and Byron Smith, but he still chose to humbly call it a modification of the Kronlein operation.

Philip Knapp gives an insight to the remarkable person that he was, not just because of his professional achievements but because of his helpful and sincere nature.[11] He would help out the other doctors with their ptosis cases. "His only stipulations were that he examine the cases preoperatively, assist at the operations and see the patient postoperatively"—the same qualities that every residency program tries to inculcate. "He was a superb teacher who would concisely take you through the operation identifying the various tissues, helping to avoid complications and constantly encouraging and praising the novice’s skill. This changed one’s approach to these cases from fear to anticipation"—everything that a good mentor should be. Apart from ophthalmology, he found pleasure in fishing and golf.

Ophthalmology has seen many shining stars and Raynold Berke was amongst the brightest, whose work continues to enlighten both the young and the experienced surgeons.

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