Rudolph Matas (1860–1957): father of vascular surgery

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Rudolph Matas was born at Bonnet Carre, a plantation appropriately 50 miles down the river from New Orleans on September 1, 1860. His father Narciso, was the plantation physician. At 5 or 6 years of age, Rudolph could name all the anatomic features of the eye and influenced everyone with his perceptiveness and exceptional memory. His elementary and secondary schooling was interrupted due to frequent move from one place to another. At any rate, young Rudolph was precocious and his accomplishments even as a teenager and a young man were always advanced for his age.

At the age of 17 years, in 1877 he entered the medical department of the university of Louisiana, later to become Tulane University. Two years later, he was chosen to travel with the US Yellow fever commission to Havana to serve as laboratory assistance and interpreter. There he met Dr. Carlos Finlay, the first to suggest the mosquito as the yellow fever vector. Matas was, for a time, the sole supporter to the theory. He recognized his work and published an article in the “New Medical Orleans and Surgical Journal” in 1882.

Rudolph Matas became a *Doctor of Medicine* at 19 years of age. He served for 2 years as a house officer at charity hospital in New Orleans and afterwards set up practice in a small office in that city. From 1885 to 1894 he served at different times as demonstrator of anatomy and instructor in surgery.

Perhaps the turning point of Matas’ Career came in March 1888 when he treated a patient of leaking aneurysm

of brachial artery. The accepted treatment until that time was to ligate both inlet and outlet vessels, the so-called Hunterian ligation developed by John Hunter. However, as most surgeons knew, all too frequently gangrene, amputation and death followed that operative procedure. Recognizing that a one-armed field hand would find employment difficult, Matas tried every technique known at that time to stop the leakage, including pressure dressings, before he finally decided to operate him. He opened the aneurysm and completed the endoaneurysmorrhaphy that bears his name today. His patient recovered and left the hospital with his arm intact and functional.

This new technique was hailed later as “the greatest advance in vascular surgery in 200 years” and from it Matas

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achieved extra ordinary fame. Extensive experience and study of aneurismal sacs led Matas to classify aneurysmorrhaphy into three basic types: obliterative, restorative and reconstructive. Among 98 total endoaneurysmorrhaphies from his personal practice, 68 were obliterative, 25 restorative and 5 reconstructive. These ingenious techniques were landmarks in the history of surgery and served as a foundation for the modern day treatment of aneurysm. Mortality in the 98 total endoaneurysmorrhaphies was remarkably low for that era; five deaths occurred, three of which were due to extrinsic causes. These monumental accomplishments have had a continuing major influence in vascular surgery through out the years

Apart from endoaneurysmorrhaphy he also introduced other techniques, as an alternative treatments like wiring, electrolysis, ligation of abdominal aorta for aortic aneurysm and aluminium banding for compression of arteries. He enlightened us on the systemic complications of arterio venous fistulas. He also contributed a lot in the field of venous diseases.

Other major contributions to surgery during the long period of his practice include confirmation that the appendix was more often intraperitoneal than extra peritoneal, his strong endorsement of laparotomy in the treatment of acute appendicitis, the first thyroidectomy to control malignancy reported in the history of New Orleans and performed the first Kondoleon operation in the western hemisphere.

He was professor and chairman of the department of surgery at Charity hospital in New Orleans, Louisiana from 1894 until 1927 and later continued as professor Emeritus until death. In addition to his many contributions as a prominent surgeon, Dr. Matas also made several important contributions to the field of anesthesiology.

He advocated the uses of local and regional anesthesia. He was first in the United States to perform a spinal anesthetic- using intra thecal encaine an November 19, 1899. He developed a small hand pump that allowed him to administer large amounts of dilute anesthetic solutions without stopping to refill a hypodermic syringe.

Dr Matas' method of intra tracheal anesthesia for thoracic cases, enabled intra pleural surgery to be done much more safely and hence the development of the thoracic surgery started.

Dr. Matas was the first to use intravenous fluid in a surgical patient in July 1888. He injected two pints of a

warm saline solution into the patient, and recovered him from shock during amputation. He was also first to advocate gastric drainage with indwelling tube introduced through the nose. In 1911, he wrote a landmark article in which he described a challenge test to assess the degree and efficacy of the collateral circulation in patients under consideration for permanent occlusion of a major vessel. He studied the feasibility of such a test by temporarily occluding the carotid and femoral arteries in dogs for variable period of time this later became a very famous clinical test to determine the adequacy of collateral circulation (Matas test)

His personal life during those years did not run as smoothly. His parents, who were never happy together, separated and divorced, and his father remarried. He married to Adrienne's, who already had two sons by her former marriage; they enjoyed 23 years of happy married life. In 1902 their only son died at birth, and in 1918, Adrienne also died of pneumonia.

An event occurred in 1908 that threatened both Matas' professional career and his confidence in him. An infection in the right eye had developed after he had operated a patient with gonorrheal pelvic inflammatory disease. He developed severe gonococcal keratoconjunctivitis, which necessitated enucleation of the right eye. He was morbidly sensitive about the loss of his eye and refused to appear in public until an artificial eye had been made to his satisfaction

Rudolph Matas became world-renowned surgeon and attained almost every high honor in America as well as in international surgical circles. His introduction of suture for the cure of aneurysm won him international fame and caused Sir William Osler to hail him as the "father of vascular surgery" and the "Modern Antyllus". His face adorns the seal of the Southern Association for Vascular Surgery in recognition of his efforts. He remained active, writing and lecturing until a few years before his death. Perhaps his most memorable address during all those years was that entitled "the soul of the surgeon".

Obviously Rudolph Matas was one of the good surgeon, a surgeon with a soul. He was a scholar of broad interest, a humanitarian, a man whose simple ways were a mark of his greatness. He will be remembering forever for his contribution to the field of vascular surgery, general surgery, anesthesia, critical care and infection control.