

## Ahmed Shafik (1933-2007)

Dear Sir,

I was never able to meet Prof. Ahmed Shafik in person. In comparison to others expressing their feelings following his death I cannot say that I have worked with him, nor was I one of his students. My link with Professor Shafik is through his scientific papers.

My first contact took place as a resident in Surgery when I studied his paper on the pathogenesis of anal abscess and fistula. The original and more complex Shafik theory of anorectal sinus was in contrast to the cryptic glandular and the perineal infection theories of Eisenhammer and Goligher. The originality of his theory was the distinguishing mark of a sharp, unique and sometimes unconventional mind.

The contribution of Professor Shafik to pelvic floor medicine was immense. Over 500 peer reviewed articles are listed in Pub Med. He was unique in the extent of his imagination, exploration and discussion. His papers ranged from his descriptions of the patho-physiology of colorectal, lower urinary tract and genital diseases in both males and females to the development of new surgical techniques. He was a pioneer in surgery and developed techniques such as the cutaneous uretero-ureterostomy urinary diversion "Shafik I" and the ileo-ureteral neo-bladder "Shafik II" procedures. Shafik's description of the pudendal canal syndrome where entrapment of the pudendal nerve in Alcock's canal could be treated by surgical decompression led to a reduction in the symptoms of proctalgia, scrotalgia, prostatodynia, vulvodynia as well as amelioration in erectile dysfunction and faecal incontinence.

Shafik's scientific work was distinguished by a methodological rigor in medical research. He first investigated his ideas in animal models and with cadaveric dissection. He obtained a theoretical and empirical rationale for his clinical diagnosis before he embarked on any new therapeutic intervention with controlled trials.

In the last years of his life functional anatomy and physiology were his most important areas of interest. Prof. Shafik investigated the macro and microscopic anatomy of the pelvic floor musculature and highlighted more than one hundred reflexes regulating and coordinating pelvic organ function. His work increased our understanding of urinary and faecal continence, voiding problems, defaecation, sexual physiology, sexual dysfunction and pelvic pain. He expanded our knowledge of the function of the gastrointestinal and genital systems by discovering four reflexes involved in swallowing and eighteen reflexes which control genital function and sexual performance in both sexes. He described nineteen syndromes and explained the aetiology of a number of other diseases which previously had been considered idiopathic.

Shafik identified the central role of Cajal cells in the generation of the electric waves responsible for colonic motor activity. The absence of Cajal cells in the specimens of patients with total colonic inertia confirmed this brilliant hypothesis. In a series of nine patients with inertia coli, he found that treatment with colonic pacing induced spontaneous rectal evacuation in 66.6% of cases providing a new therapeutic option in the treatment of severe constipation.

Shafik suggested a relationship between the colonic motor disorders due to an aberrant focus in colonic pacemakers,

called "tachyarrhythmia", and the symptoms of Irritable Bowel Syndrome (IBS). Colonic pacing in IBS patients not responsive to the other classical therapeutic measures, induced the normalization of the tachyarrhythmic pattern, with a reduction of IBS symptoms. On the basis of finding the same pathophysiological electrical and motility patterns Shafik proposed a new explanation for the pathogenesis of early diverticular disease suspecting this to be an advanced stage of IBS.

In his busy laboratory and clinic in Cairo, Egypt, Shafik pioneered new advances in medical, bio-engineering and diagnostic technology. He developed an electrified urine catheter for decreasing bacteriuria and a fecoflowmetry system to provide a quantitative and qualitative assessment of defecatory function. New routes for drug administration in advanced pelvic malignancy (bladder, prostate and uterus cancer) using rectourogenital communicating veins (haemorrhoidal, vesico-vaginal and the vesico-prostatic venous plexus) were evaluated. Submucosal anal injection with a high local concentration of chemotherapeutic agents could be given with reduced systemic effects. According to Shafik this anatomical pattern could explain the supposed relationship between constipation and lower urinary tract symptoms (LUTS), causing mainly urinary tract infections in female patients.

Thanks to his work in gastroenterology, coloproctology, urology, gynaecology, and andrology Shafik was one of the few surgeons, if not the first and only one, with an effective trans-disciplinary view of the pelvic floor that he considered as a functional unit. He discovered important relationships between the different compartments enhancing the understanding of pelvic physiology and anatomy and he emphasized the importance of connective tissue *in pelvic physiology*.

The fascinating originality of his papers and his scientific proposals, as well as his unique character, appearance and expression, made Ahmed Shafik a figure on the world stage. Like all great thinkers and prophets his teaching was sometimes surrounded with scepticism by the scientific community and accepted with difficulty because according to his critics his work was not supported by evidence based medicine. Shafik preferred to create and describe innovative surgical operations and explain new concepts in physiology and anatomy rather than carrying out meta-analyses or undertake prospective controlled trials. He worked off the beaten track to show us alternative and attractive new ways.

Creativity and unconventionality were the main distinguishing marks of Ahmed Shafik. He showed us that curiosity was central in our work and that clinical practice and academic science have to coexist in the same individual. The surgeon is both a physician and a scientist, and he has to balance the demands of his clinical practice with his academic commitment. Professor Shafik pursued the unitary view of the pelvic floor for his entire life as a scientist. We shall miss him greatly.

Dr. LUCA AMADIO M.D.

Trainee in Colorectal Surgery, Italy.

Email: amadioluca@libero.it