ECRONICON OPEN ACCESS

EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM

Editorial

Imaging of Evacuation: A Never Ending Graphic Novel

Vittorio L Piloni*

Diagnostic Imaging, Diagnostica Marche, Private Office via Industria 1-60027 Osimo, Ancona, Italy

***Corresponding Author:** Vittorio L Piloni, Diagnostic Imaging, Diagnostica Marche, Private Office via Industria 1-60027 Osimo, Ancona, Italy.

Received: June 05, 2023; **Published:** June 12, 2023

Much of current knowledge of the evacuation phenomenon in humans has followed closely and, in some cases, has literally walked on the wheels of diagnostic imaging. Over the past several years the technological advances in the field of body imaging have been too numerous to catalogue. Still today the innovations follow one another at an uncessant pace so that as soon as a new proposal appears on the horizon, there is not enough time to investigate it before a further one is already outlined.

At the very beginning of the experience, researchers were mainly concerned with (a) how to implement such a private function as evacuation in a "hostile" laboratory environment and (b) how to achieve on command such an act that is usually obtained at will only in the presence of an adequate sensation of fullness. In practice, two methods of simulated defecation were developed which were essentially based on one of the following lines: a radiolabelled synthetic potato mesh was inserted intrarectally until reaching the need to evacuate and the dynamic changes during simulated defecation were recorded using a gamma camera, a method also known as Isotope Dynamic Proctography; a semisolid barium sulfate suspension, alone or in combination with a potato mesh, was administered in the same way and rectal emptying was documented with cine fluorography, a method universally known as X-ray Dynamic Proctography. In both cases, the completeness and rapidity of rectal emptying, the changes in the angulation of anorectal junction, and the extent of its downward displacement, combined with the presence of well established morphologic changes of the contrast filled gut profile - whether protruding outward, intraluminally or outside the anal verge - are subsequently correlated with symptoms to help physicians obtaining a more confident diagnosis and decide proper therapy, accordingly.

Starting in the late 90s, the progressive replacement of motion picture radiography by non-ionizing techniques when assessing pelvic floor dysfunctions, namely magnetic resonance imaging, has led more and more young people to undergo diagnostic tests by imaging with greater ease than in the past. This phenomenon has particularly affected the field of evacuation disorders for which there was a reasonable reluctance to use diagnostic radiography in the young age both by the patient and the referring physicians due to the well known radiation hazard associated with the exam. Today, the expanding use of MRI (using acoustic gel as contrast) has led to its routine use in stool disorders as the method of choice despite the less physiological position (horizontal) for the patient and may have contributed to surface hidden clinical problems, which rarely if ever would have been investigated on in youth, such as long term results of surgery after repair of congenital anomalies and sexual dysfunctions associated to evacuation disorders, to name a few. Although being an overt stimulating opportunity, however, all that entails a new challenge in the daily work activity that the radiologist is currently facing with, i.e. the need to manage such a huge amount of clinical data and images that they can exceed his own memory and interpretation capabilities, resulting in increased risk of error, especially in case of repetitive high precision measurements. Fortunately, the recent application of computer-aided

detection systems based on artificial intelligence (AI) will assist radiologists in avoiding such errors by incorporating in the diagnostic tool itself specific algorithms able to perform image analysis, detection of changes and reporting a spectrum of AI diagnoses.

Undoubtedly, it is still early to ask what is the true value of this current trend and under judgement its relationship with respect to the tools used in the past. Not by chance, the experience teaches that each modality goes through a cyclical pattern of evolution. In the earliest phase of this evolution, most research is descriptive and anecdotal in nature. As a modality becomes established, it enters a second phase in which it is touted as being superior to all prior conventional modalities. The third phase represents a sort of backlash effect, in which the shortcomings of a new technique and its inferiority to prior modalities are stressed. It is usually during this phase that the superiority of the pure physical examination over diagnostic imaging is claimed by clinicians. Finally, as the technical development of a new modality reaches a plateau, the literature reflects equilibration with earlier techniques. It is during this phase that the true cost-effectiveness of a new imaging technique and its impact on patient care are established. In the real practice, rather than being a single-modality advocate who fails to see the potential inter-relationships among the available imaging techniques, the radiologist must be prepared to offer unbiased aid to his referring physician by choosing the most cost-effective procedure from the radiologic armamentarium and the best problem solving option. The near future will prove the true meaning and value of the current trend.

Volume 10 Issue 4 April 2023