

Editorial

Beyond "Lumenology"

The gold standard in our understanding of coronary disease has been the autopsy study. However, this is far from being an ideal gold standard. The patient has to die and the family agree to autopsy before the doctor can confirm the diagnosis. The dead patient ofcourse cannot benefit from this knowledge, which may or may not be relevant to the next case. Also, while autopsy captures altered anatomy frozen at the moment of death, it cannot tell much about the dynamic activity and changes that are going on during life, the effectiveness of medical and surgical interventions and the body's response to them. So, it was no big surprise, that selective Coronary Angiography introduced by Mason Sones swept the cardiology world as a "Raging Monarch." It has ruled ever since as the gold standard in the study of coronary disease in the living person.

Lately, there have appeared serious threats to this rule of the coronary angiogram. The very nature of this investigation limits it to the study of 'shadows' i.e. the lumen of vessels outlined by contrast injected. But, the disease we all know is not in the lumen, it lies in the walls of the coronary arteries! Despite this glaring and profound limitation, coronary angiography has given us vital information and dramatic results over the years. However, in our unending quest for the ideal gold standard and our ever increasing understanding of the limitations of guessing about the arterial wall from 'shadows' of the lumen outline, we seem to be moving BEYOND coronary angiography!

Newer and fancier techniques are now available such as angioscopy to look inside the lumen in a living artery and intracoronary ultrasound to look at and characterize the arterial wall itself and intracoronary Doppler to measure flows in normal or diseased segments. These have allowed us to understand coronary disease as never before. Also, in the process, glaring limitations of coronary angiography as a gold standard have been brought out. Arteries which are diffusely and uniformly narrowed end up being called "normal"! A "non-significant" lesion may actually be a "severe" lesion and not recognized as such because adjacent areas used as reference "normal" areas may themselves be significantly diseased with there being no way for the angiographer to know. The diffuseness of coronary disease in many patients, especially in diabetics, hyperlipidemics and lately and particularly in post cardiac transplant patients, make the lumen studying technique of coronary angiography highly unsatisfactory.

Does all this mean that coronary angiography is out? Far from it! The contribution and continuing usefulness of coronary angiography is established and it still reigns — though not supreme. Monarchy it seems has gone out of fashion in medicine as well! We have not yet replaced coronary angiography though, we have just gone beyond the narrow confines of "Lumenology" and put coronary angiography in its proper perspective.

The King is dead; Long live the King!

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