Abdominal Aortic Aneurysm in Jordan: Status and Management Strategy

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There are very few epidemiological studies in the Middle East to elucidate the incidence and prevalence of abdominal aortic aneurysms in the region [1]. There is no good reason however to think it might be greatly different in Jordan than western data. The average life expectancy in Jordan is 74 years [2] which is lower than western life expectancy however this is offset by a higher prevalence of risk factors and most significantly smoking where 62 % of adult males smoke [3].

A specialized vascular surgery service has been in existence in Jordan for about three decades with a training vascular surgery unit that qualifies trainees with Jordan Vascular Board established in 1993. We have noticed over the last two decades a huge increment in the number of cases diagnosed with abdominal aortic aneurysms. This is mainly due to better awareness of the condition and the widespread availability and use of diagnostic modalities like ultrasound and CT.

The etiology is mainly atherosclerosis, however we do see a fair number of unusual etiologies like Behcet's disease [4] and mycotic aneurysms mainly due to the large catchment area of around six million population and referrals from adjacent countries, as Jordan tends to be a popular medical tourism destination.

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The most commonly encountered elective presentation is incidental finding during imaging for other complaints [5].

What comes also with the improved diagnostics and advance in the standard of specialized care is timely diagnosis and treatment of ruptured aneurysms.

The full spectrum of diagnostic modalities is available even in peripheral hospitals in the south of the country. The main vascular unit in the country is at King Hussien Medical Center, Amman. It has a specialized vascular laboratory, which undertakes size surveillance for smaller aneurysms not indicated yet for treatment.

Repair of aortic abdominal aneurysm (AAA) is performed to prevent progressive expansion and rupture [6]. The surgical repair first reported in 1962 remains the treatment with the best long-term results. It is a major surgical procedure done under general anesthesia, usually consisting of a mid-line laparotomy and cross clamping of the aorta and the iliac vessels. Open surgery has non-negligible mortality (3–7 %) and postoperative complications associated with along hospital stay (10.8 days average) [7].

In our practice surgery is reserved these days to fit younger patients and those not appropriate for endovascular repair. Our aneurysm practice has taken a paradigm shift towards endovascular repair driven by outcomes and patient wishes.

In our aortic surgery practice we have developed mini-laparotomy aortic surgery either

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through a midline or transverse incision into the standard and as such when appropriate we do mini-laparatomy aneurysm repair, which seem to have shorter hospital stay, faster recovery and less perioperative morbidity. A bias selection towards fit non obese patients tends to exist.

Since first reported nearly 25 years ago, endovascular aneurysm repair (EVAR) has been established as a safe and effective alternative to open surgical repair in the treatment of infrarenal AAAs [8].

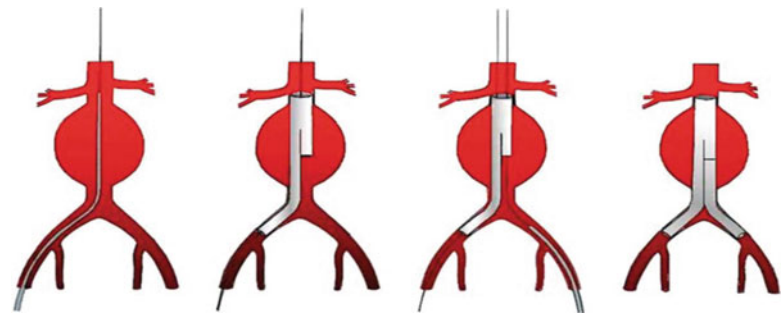
Equated to the gold standard of open repair, EVAR, as a "one-time procedure," substantially reduces operative morbidity, hospital stay, costs, and utilization of intensive care facilities if performed in a high-volume center [9].

Converge includes EVAR procedures, which has been a boost to our practice since our first EVAR back in 1999.

We have also formulated a working relationship with industry that makes a large spectrum of devices available on shelf for emergencies including ruptures.

Our endovascular practice is the second biggest in the region with around 75 grafts deployed annually and close to 500 have been done so far.

We also tend to get the more complex cases either from other health institutions in Jordan or from adjacent countries. We have recently presented our experience with extension of proximal landing zone by use of chimney or hybrid



With improvements in devices, the main problems with EVAR are being tackled. These include the need for followup imaging and repeat interventions, endoleak, and late ruptures.

EVAR is best performed in specialized centers.

Our vascular surgery unit is one of the few specialized centers in the region. The service is also provided in the private sector in many of the larger hospitals in Amman.

Jordanian nationals enjoy a near universal free health coverage where all those that have a national number have access to treatment in our vascular surgery unit.

procedures. Recent publications on the chimney technique [10] encourage us to use it more where it is indicated.

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