Hybrid surgery as a new perspective for treatment of abdominal aortic aneurysm associated with a congenital pelvic kidney

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Abstract The coexistence of an infra-renal abdominal aortic aneurysm (AAA) and a congenital pelvic kidney (CPK) is rare and there are only a few cases reported in literature, mostly treated by conventional open surgery. We present the first report of hybrid surgery as a successful and less invasive treatment for this association. A 75 year-old patient was referred to our department with a 5.7 cm diameter AAA and an ectopic right CPK vascularized by one artery, originated from the anterior wall of the aneurysm in the distal aorta. Treatment consisted in an ilio-renal bypass with autologous saphenous vein by a retroperitoneal approach, followed by the aneurysm endovascular aneurysm repair (EVAR) with an aorto-uni-iliac stent-graft, occlusion of left common iliac artery and ePTFE femoro-femoral crossover bypass. This procedure was simpler and less aggressive than a conventional surgery, with only 6 minutes of renal ischemia, which allowed preservation of the renal function and a faster recovery of the patient.

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PALAVRAS-CHAVE
Rim pélvico ectópico; Aneurisma aorta; Cirurgia híbrida; Endovascular; EVAR

Cirurgia híbrida como uma nova perspetiva para o tratamento de aneurisma da aorta abdominal associado a rim pélvico ectópico

Resumo A associação de um aneurisma da aorta abdominal (AAA) e um rim congenitamente localizado na região pélvica é rara e, nos poucos casos existentes na literatura, o tratamento foi realizado por cirurgia convencional. Apresentamos a primeira descrição de tratamento desta associação, com sucesso e menor invasibilidade, por cirurgia híbrida. O caso reporta um doente de 75 anos, referenciado para o nosso Serviço com AAA de 5.7 cm de diâmetro e um rim direito ectópico, de localização pélvica, perfundido por uma artéria única originada na parede anterior de
do aneurisma, na aorta distal. O tratamento consistiu em bypass ilio-renal com veia grande safena autóloga por abordagem retroperitoneal, seguido de exclusão endovascular do AAA com endoprótese aorto-uni-ilica, oclusão da artéria ilíaca comum esquerda e bypass femoro-femoral cruzado com prótese de ePTFE. Este procedimento foi mais simples e menos agressivo do que uma cirurgia clássica, tendo apenas seis minutos de isquemia renal, o que permitiu a preservação completa da função renal e uma recuperação pós-operatória mais rápida.

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Figure 1 Pre-operative CT scan: ectopic right pelvic kidney vascularized by a single artery originated from the anterior wall of the abdominal aortic aneurysm.

Figure 2 Post-operative CT scan: endovascular successful AAA exclusion, with patent ilio-renal (arrow) and femoral crossover bypasses.
benefit of the low invasiveness of an endovascular repair (without laparotomy or aortic clamping), and the possibility of usage of commercially available stent-grafts.

Conclusion

Hybrid surgery is simple, effective and non-aggressive technique to treat an AAA associated with abnormal congenital renal vascularizations, allowing shorter times of renal ischemia, a quicker recovery and hospitalization. As far as we are concerned this is the first reported case in literature of the treatment of an AAA associated with a CPK by this technique. We recommend its usage as a first line treatment for high-risk surgical patients. Still, more experience and comprehensive data are needed before it can be recommended as a first option treatment for all the cases.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that no patient data appear in this article.

Right to privacy and informed consent. The authors declare that no patient data appear in this article.

Conflicts of interest

The authors have no conflicts of interest to declare.

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