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Abdominal Aortic Aneurysm Repair: Endovascular or Open Surgery

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Abstract

Introduction: Several studies have been conducted about the comparison of aortic aneurysm repair by endovascular and open surgery, and mainly the purpose and results have been focused on complications and mortality rates, but it is important to mention whether the use of each of the treatment methods alone is possible in all cases.

The purpose of this study is to investigate the possibility of performing open or endovascular surgery in all cases.

Methods: In this prospective study, patients with abdominal aortic aneurysm who were candidates for treatment were divided into three groups: 1) Patients for whom classic endovascular is not possible 2) Patients for whom open surgery is not possible and 3) Patients for whom both options are possible.

The first group includes patients whose anatomical limitations or renal dysfunction prevent them from performing classic endovascular surgery, and instead of using complex and unconventional methods (OUT OF IFU), they were subjected to open surgery. The second group consisted of patients who could not tolerate general anesthesia due to concurrent underlying disease, or who could not undergo open surgery due to previous abdominal surgery or inflammatory aneurysm. The third group is the patients that the type of treatment based on the presence of a suitable endograft, the patient's preference, and ultimately the physician's decision.

Results: Due to the impossibility of performing abdominal aortic aneurysm repair only with an open or endovascular method, it is important to be able to do of both methods in choosing the appropriate treatment.

Conclusion: The training of vascular surgeons capable of performing both methods, leads to the selection of the best and beneficial treatment for these patients.

Keywords: Aortic aneurysm, Endovascular, Open surgery, Vascular surgeon

Successful Endovascular Management of Giant Internal Iliac Aneurysm; A Case Report

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Abstract

Introduction: Iliac artery aneurysms (IAAs) commonly occur concurrently with more proximal arterial aneurysms. Isolated iliac aneurysms occur with an incidence of 0.4% to 1.9% in the general population. Aneurysmal degeneration typically involves the common iliac artery (CIA, 70%–90%) and internal iliac artery (IIA, 10%–30%), or both of these segments contiguously. Endovascular iliac arterial aneurysm repair has advantages over open repair with regard to surgical invasiveness; hypogastric artery embolization is a commonly-adopted technique for this procedure.

Case presentation: A 63 y/o male presented with an incidentally found iliac aneurysm in abdominopelvic U/S with no symptoms related to U/S finding. He was previously smoker, overweighted, with history of controlled DM and HTN. CTA performed for planning treatment, showed bilateral CIA aneurysms (L:29 mm, R: 38 mm) and right side internal iliac artery aneurysm (8 cm) with healthy aorta. Because of no proper proximal landing zone for aneurysm in common iliacs arteries, we decided to do coil embolization of internal iliac with EVAR to treat patient. the procedure performed successfully with no endoleakage in completion angiography. Patient discharged 2 days after procedure with no complication.

Discussion: Endovascular repair of isolated common IAAs requires approximately 2 cm of proximal and distal landing zone. Lack of a proximal landing zone necessitates extension into the abdominal aorta to achieve seal and a bifurcated aortic endograft is generally the most appropriate choice. Covering internal iliac arteries has a risk of pelvic ischemia and using iliac branch device could rescue patient from pelvic ischemia in bilateral internal iliac artery coverage. In our patient because of unilateral coverage of internal iliac and minimal risk of pelvic ischemia IBD was not required.

Keywords: Aneurysm, Iliac Artery, EVAR

Treatment of traumatic pseudoaneurysm of the aorta with EVAR

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Abstract

Introduction: The introduction of endovascular aneurysm repair (EVAR) has changed how abdominal aortic aneurysm (AAA) is approached, with a dramatic increase in the proportion of AAA treated with EVAR compared to open repair.

Case presentation: A 42-year-old man who underwent a laparotomy due to a gunshot to the abdomen. Due to damage to the left renal artery and small intestine, he underwent a nephrectomy and small intestine repair. The patient was discharged after a week with a good general condition.

After two months, the patient was referred with a pulsating mass in the front of the abdomen, which was performed for the patient. Contrast-enhanced computed tomography (CT) demonstrates abdominal aorta pseudo aneurysm. Considering the history of previous laparotomy and the large pseudo aneurysm around the aorta originating from the nephrectomy site, it was decided to perform EVAR WITH RIGHT RENAL STENTING surgery. In angiography shows with active extravasation of contrast. A 26 x 10 cm stent graft that fits the patient's aorta park in aorta Then, through the brachial sheet, V12 stent graft 70*56 mm was opened inside the renal opening and the end the aorta stent was opened in the aorta. After the procedure was completed, no end leak species was seen in the final angiography.

Discussion: The advent and proliferation of endovascular techniques has changed the way vascular surgeons approach almost all aspects of vascular disease. Trauma surgery includes injuries to vascular structures, repair of which has traditionally been performed by open technique. Retrospective results of the use of endovascular management of suitably located aortic injuries achieve good aortic results. Open management has been shown to be associated with a higher rate of mortality than management with EVAR, even when adjusted for other injuries and injury severity score.

Keywords: Pseudo Aneurysm, Aorta, Endovascular

Investigating the success rate and complications of hybrid revascularization surgical technique in treating multi-level critical limb ischemia

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Abstract

Peripheral artery disease is a disease that leads to obstruction of blood flow in arteries, especially coronary arteries. Hybrid Revascularization Surgery Technique is one of the methods in the treatment of critical limb ischemia in people with peripheral arterial disease. In a case series study of patients who had peripheral vascular occlusion from 2016 to 2021 and referred to Razi Medical Center in Rasht and were treated with a hybrid procedure by CFA arterial endarterectomy and simultaneous Inflow & Outflow angioplasty, a checklist included Age, sex, local complications, exacerbation of ischemia, inflow artery involvement, outflow artery involvement, blood flow success rate, symptom success rate, and wound healing rate were collected. Sixteen patients were studied during this period, of which 13 were male and 3 were female. Their mean age was 67.75 ± 10.55 years and the youngest person was 47 years old and the oldest person was 86 years old. 2 patients had only Inflow involvement, 8 patients had only Outflow involvement and 6 patients had both Inflow and Outflow involvement. Of the 16 patients studied, 1 patient did not present after surgery and the information on the success or failure of their surgery is not known, but of the other 15 patients, 13 patient (87%) had their wounds healed and their surgery was successful. In our study, the majority of patients (13 out of 15 patients) had technically successful vascular surgery, which is a significant success in terms of mortality and morbidity compared to open surgery according to other studies. In aortic and lower extremity stenosis, with this procedure, the mortality and morbidity rates are low and the success rate is high. It is also an acceptable method due to shortening the duration of surgery and the time of hospitalization of the patient and not opening the abdomen.

Keywords: Peripheral artery disease, Critical Limb Ischemia, Hybrid Vascularization

Tunneled cuff catheter for hemodialysis inserted ipsilateral side of an Implantable cardiac device: a case report

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Abstract

Chronic kidney disease (CKD) is a common disease worldwide. CKD's prevalence and incidence are increasing in the world and hemodialysis still remains as the main treatment for ESRD patients. Different methods are available to create an effective venous access for hemodialysis, like: Arteriovenous fistula (AVF) intravascular catheters and vascular grafts (VGs). Tunneled cuff catheters are the alternative choice when the patient does not accept the surgical procedure to implant AVF or AVF is difficult or contraindicated such as heart failure, peripheral vascular disease, obesity or elderly patients AND Vascular surgeons can keep this method in mind in case of unavailability of AVF or contralateral extremity. Renal dysfunction and cardiac arrhythmias keep company with each other and using an implantable cardiac device (ICD) is raising in end-stage renal disease (ESRD) patients over the time. Internal jugular vein and femoral vein give us good access to insert a tunneled cuff catheter. Choosing a proper site for inserting a TCC is challenging because having a TCC in the ipsilateral site of an ICD lead can raise the probability of being complicated

We present a case that inserting a Tunneled cuff catheter (TCC) ipsilateral to an ICD lead was challenging. Having both TCC and ICD at the same extremity may increase the risk of complications such as thrombosis, infection or catheter dysfunction and femoral catheters are not the choice due to their high rate of complications.

Inserting a TCC, ipsilateral to an ICD lead for long-term hemodialysis in company with an interventional cardiologist, despite of all the complicated risks, can be considered when the other choice is only using a femoral approach to insert a TCC.

Keywords: Cuff Catheter, Tunneled catheter, Hemodialysis, Cardiac device

Temporary hemodialysis catheters: cost effective tools during permanent access maturation, A cross-sectional study

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Abstract

Introduction: Nowadays, the number of people who requires chronic hemodialysis has increased, and providing a suitable access method for these patients has become one of the main tasks of vascular surgeons. Arteriovenous fistulas are the best access method for hemodialysis; however, they require an average interval of two months from the implantation to the time of use. Several scientific sources recommend tunnels in this time frame for hemodialysis and advocate temporary catheters for fewer than two weeks, expected to sanctions, and economic and equipment limitations, in some cases, we have had to rely on temporary catheters until the arteriovenous fistula is able to use. Evaluation outcomes of temporary hemodialysis catheter implantation as long as permanent access prepared in patients with chronic hemodialysis.

Materials and Methods: This cross-sectional study was conducted in 5th Azar and Sayad Shirazi hospitals in Gorgan, Iran, on 74 dialysis patients implanted with a temporary jugular dialysis catheter during arteriovenous fistula implantation. The patients followed up until their fistulas matured, then the function of the temporary dialysis catheter and the need for re-catheterization were investigated. Outcomes were collected prospectively and analyzed by appropriate statistical tests.

Result: 39 (52.7%) of the studied subjects were female, 35 (47.3%) were male. The average age of the subjects studied was 53.03 ± 14.79 years. The duration of the temporary dialysis catheter, Temporary Jugular catheter, in the studied patients was 46.41 ± 17.13 days. The longest duration of operation was 78 days. 47 of the investigated cases (63.5%) were still working appropriately at the time of arteriovenous fistula maturation. Although the duration of using temporary dialysis catheters reported to be limited in studies, it is possible to increase time of using them in patients depending on the conditions and considering some factors. In communities with limited financial resources in the healthcare system and unable to provide permanent catheters based on considerations, this can be a considerable temporary alternative procedure.

Keywords: Hemodialysis, Catheters, A.V Fistula Maturation

Investigation of the expression of key genes of arteriovenous malformation for the purpose of diagnosis, prognosis and treatment of patients

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Abstract

Introduction: Vascular malformations (VMs) occur during early vascular development resulting in abnormally formed vessels that can manifest as arterial, venous, capillary or lymphatic lesions or in combination, and include local tissue overdevelopment. Targeting related genes can provide effective treatment of VMs. However, it may be difficult to identification of appropriate target gene among a complex network of differentially expressed genes (DEGs), we analyzed the high throughput gene expression data through network-based approaches to achieve important therapeutic targets.

Methods: A Dataset was taken from gene expression omnibus (GEO). Gene expression analysis was done via ExAtlas software. Gene enrichment analysis was done using Database for Annotation, Visualization and Integrated Discovery. Protein-protein interaction network was analyzed by Cytoscape 3.8.0 to find hub genes and significant modules. The clinical importance of candidate genes in predicting vascular malformation patient's outcome was determined using ROC analysis and survival analysis. The mRNA nucleotide sequences of reference and target genes were obtained from NCBI. The primers for all genes were designed by Allele ID 7.6 software. The genes expressions in the VMs tissues were measured using RT-qPCR.

Results: A total of 29 unique DEGs (1 upregulated and 28 downregulated) were identified that were mainly enriched in molecular functions of RNA polymerase, ribonucleoprotein, DNA and RNA binding. Main enriched cellular compartments related to DEGs were intracellular regions, nucleoplasm and kinetochores. Also, DEGs were mainly involved in pathways of cell inflammation, tumorigenesis, apoptosis, and VEGF-mediated angiogenesis through AKT/MAPK/ ERK1/2 signaling pathways. Network analysis revealed 25 hub genes that 17 of them were contributed in three significant modules and considered as key hub genes. Only 8 key hub genes were able to predict type of VMs patients and considered as candidate genes. Among them, two genes were positively correlated with AVMs patients.

Conclusion: We found 8 gene signatures associated with angiogenesis that predict clinical response of AVM patients to conventional therapies.

Keywords: Vascular malformations, Arteriovenous malformation, Protein-protein interaction network, Real time PCR, Gene expression

A Customized Diagnostic and Therapeutic Algorithmic Approach to Vascular Malformations and Hemangiomas

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Abstract

Introduction: Vascular Anomalies are divided into two types: vascular tumors and vascular malformations. Vascular Malformations can be low flow, high flow or combined.

Imaging technology and interventional radiology is crucial for an accurate diagnosis and treatment planning of vascular anomalies. There is not any universal protocol to diagnose and manage a patient with vascular anomaly. We tried to present a simple and customized algorithm to manage these lesions.

Discussion: The first step for approaching these lesions is taking a meticulous history and contemplating a thorough physical examination. Any well-defined lesion should be considered for resection and MRI should be done to define lesion extension before surgery.

Infantile Hemangiomas (IH) are mostly treated conservatively with observation. Any IH that interferes with any organ function should be considered for treatment with steroids or betablockers.

Capillary malformations are mostly treated with pulsed dye laser (PDL). The most common vascular malformation (VM) is venous malformation. The imaging modality of choice to assess well-defined VM is MRI. Whenever there is an ill-defined VM ultrasonography can be used to assess the feasibility of sclerotherapy. Lymphatic malformations can be either microcystic or macrocystic.

Cystic hygromas should be considered for resection or sclerotherapy and Lymphangiomas can be respected. Whenever there is a high flow AVM, if there is an ill-defined lesion, angiography is used to localize the nidus and guide embolization. If there is a well-defined AVM, MRI can be used as an imaging modality to guide lesion resection and if needed interventional therapy.

Keywords: Vascular anomaly, Algorithm

Superior vena cava rupture and cardiac tamponade complicating the endovascular treatment of superior vena cava syndrome: a case presentation

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Abstract

Introduction: SVC syndrome is one of the most common complication of dialysis access catheter. Due to catheter dysfunction or head and neck edema some patients may need SVC venoplasty. One of the critical complication of this procedure is SVC and management of this complication is challenging. This complication can have been managed conservatively or may need open or endovascular repair.

Case Report: Fifty-six-year-old man known to have ESRD of 5 years' duration, with hemodialysis performed through jugular catheters. Presented for catheter dysfunction. Venography revealed a fibrin sheet around the catheter. Venoplasty with 12mm balloon was performed and during procedure the patient complained of sudden retrosternal & sharp pain. Blood pressure and heart rate dropped to 70 mm hg and 60 BPM respectively. Contrast leak was seen from SVC to pericardium. Large bore catheter was placed in femoral vein, followed by resuscitation. Emergently, Cardiologist was called, moderate local pericardial effusion was noticed in echocardiography and without pericardiocentesis, patient hemodynamics were stable. Patient was transferred to ICU. In control CT venography performed 24 hours later, mild pericardial effusion was seen. Eventually, patient was discharged after 72 hours with good conditions.

Discussion: Endovascular SVC plasty is a safe and effective therapy that can help maximize a patients' quality of life. However, the procedure carries a small risk of major complication, including SVC perforation and cardiac tamponade. Preprocedural planning can minimize the risk of severe complication.

Keywords: Cardiac Tamponade, Venoplasty, Hemodialysis Catheter, Fibrin Sheet

Hybrid surgery of arteriovenous malformation and aneurysm on the foot, A case report

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Abstract

Introduction: Arteriovenous malformations of the sole of the foot are rare and can cause disturbances in normal living activities.

Case presentation: A 31-year-old female patient came to our center with severe pain in the sole of her right foot while walking, which had been increasing since 6 months ago. The patient had no history of any previous disease and no surgery or trauma. In the sonography, an aneurysm was reported in the posterior tibia artery in the ankle zone along with numerous prominent vessels in the sole of the foot. In the angiography, an aneurysm was detected in the posterior tibia artery at the back of the ankle along with AVM in the sole of the foot. According to that, a hybrid surgery was decided. After spinal anesthesia, the skin was opened with an incision in medial post of malleol, and the aneurysmal part of the posterior tibia artery was released, and control then a sheet was inserted from the distal part of the aneurysm thorough the guide wire and entered to the artery and then fixed. Then an angiography of the plantar of the foot was performed and the feeding arteries of AVM were determined, first we clamped proximal of aneurysm and then PVA embolization was done. Due to the large size of AVM continue with gel foam Embolization. At last, a main feeding branch was closed with a coil and the major part of AVM was closed. After, the aneurysmal part was removed and the saphenous vein interposition of the posterior tibia artery. In the post-operative examination, the patient had no movement disorders and the pulsating mass on the sole of the foot was not palpable.

Discussion: AVMs of the sole of the foot are rare and can cause disturbances in normal living activities. Surgical excision of the AVM was the gold-standard treatment but is difficult because AVMs usually exist inside normal tissue. However, surgical ligation or coil embolization of the feeding artery is also difficult and possibly harmful due to consequent development of numerous collateral feeders shunting to the nidus.

Keywords: AVM, Hybrid surgery, Aneurysm of tibial artery

Pelvic arteriovenous malformation (AVM) with hematuria. A case report

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Abstract

Introduction: Arteriovenous malformation (AVM) of the pelvis is a rare benign vascular lesion. The clinical significance of pelvic AVM lies in its presentation with painless haematuria.

A 36-year-old woman who had complained of gross haematuria since 5 months ago. The patient's haematuria was intermittent and accompanied by the discharge of large clots, which cause anemia. The patient had undergone C/S 4 times; the last time was 2 years ago.

Due to haematuria, the patient underwent cystoscopy twice by the urology service, and many clots were discharged from the bladder, but no obvious pathology was seen in the bladder and ureter but there was a small ulcer in urethra. Abdominal and pelvic CT with contrast done for her and a vascular mass was seen in the left lateral part of the pelvis, extending to the bladder neck, which suggested AVM. The patient was operated by the urology service that no clear pathology was seen around the bladder and pelvic cavity in the abdomen during the laparotomy. In our centre, the patient underwent angiography and embolization with coil and gel foam in the left internal iliac malformation. After this treatment, the haematuria stopped for several weeks, but the patient returned with severe haematuria. The patient underwent diagnostic angiography again in another centre, which showed a complete blockage in the left internal iliac due to the use of multiple coils, and a venous-arterial malformation was seen on the right side related to the right internal iliac, which was embolized with a combination of glue and lipidol. After 7 days because of haematuria did not stop, a venography was performed, and a malformation related to the left iliac vein was seen, and embolization was performed with foam sclerotherapy (fibrovenin 3%) and 97% alcohol in the above-mentioned. The patient returned to our centre 40 days after the last embolization with gross haematuria, and again underwent right iliac angiography and arterial venous malformation embolization with three vials PVA (7x500). In the follow-up after two months, the patient did not have hematuria. Angioembolization treatment is one of the main methods in the treatment of arteriovenous malformation, but the main point in the treatment is to inform the patient about his disease and that it is possible that he will be operated on several times, and the patient's cooperation to continue the treatment is one of the main principles for the definitive treatment of the patient. An important point in angioembolization is the use of the appropriate material according to the location and general plan to AVM. In general, embolization materials can be permanent such as coils or temporary such as gel foam. Temporary embolization materials are mostly used in cases where the surgical plan should be a next stage because after some time this embolized material will be resolved and AVM will return.

Keywords: AVM, Hematuria, Angiographic Embolization

Iliac artery aneurysm, a late presentation of high flow AV malformation; a Challenging case

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Abstract

Introduction: Peripheral vascular malformations encompass a wide spectrum of lesions that can present as an incidental finding or produce potentially life- or limb-threatening complications. AVMs are classified into low-flow malformations such as venous, lymphatic and capillary lesions, and high-flow malformations, including arteriovenous malformations (AVMs) and arteriovenous fistulas (AVFs). The high blood flow in the lesions produces a pulsatile, red, warm mass with a thrill on examinations. Arterial and venous aneurysms are the rare complications of high flow AVM. Ulceration and hemorrhage may be seen in extreme cases.

Case Report: Thirty-Six years old man presented for groin swelling and pulsatile mass, He claimed he underwent multiple varices surgeries. Currently, physical exam revealed an edematous lower limb, associated with chronic venous insufficiency symptoms. In CT-Angiography, arterial and venous aneurysms were seen.

Discussion: Peripheral vascular malformations (PVMs) encompass a wide spectrum of lesions that can present as an incidental finding or produce potentially life or limb-threatening complications. Treatment is very much based on the impact of the lesions on the patients' quality of life, weighed against the risk of complications. In most cases, conservative treatment is recommended, but when a patient suffers clinical complications, treatment needs to be considered. There is no unified agreement on the ideal treatment of these more complex malformations and a case-by-case basis multidisciplinary approach has been advocated.

Keywords: Arteriovenous malformation, Arterial Aneurysm, Stasis Ulcer, Venous Aneurysm

Arteriovenous malformation or iatrogenic arteriovenous fistula in child: a diagnostic challenge and case report

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Abstract

Introduction: Iatrogenic arteriovenous fistulas (AVF) are well described in adults; however, this complication is rarely described and report in infant. Arteriovenous malformation (AVM) is more common than AVF in childhood.

Case Report: Four years old boy known to have galactosemia with history of multiple hospitalizations, referred for edema of the right upper limb and engorgement of the thoracic and arm veins. Physical examination revealed trill and bruit in the antecubital region. He managed as AVM for a long time. In Doppler ultrasound, a connection between antecubital artery and deep vein was seen. CT angiogram findings were in favour of AVF.

Ultimately, diagnosed for iatrogenic AVF, the patient underwent open surgical treatment. The vein ligated and brachial artery repaired primarily.

Discussion: Diagnosis of an iatrogenic AVF in a child can be difficult due to in frequent presentation as well as the nonspecific finding on physical exam. The appearance can mimic other conditions such as vascular malformation. We report an unusual case of a clinically significant iatrogenic AVF that was initially mistaken for AVM.

Keywords: Iatrogenic Arteriovenous Fistula; Arteriovenous malformation; Infancy Vascular Tumour

Comparison of distal arterial hemodynamic changes of the upper limb in dialysis loop arterial grafts and brachial artery grafts

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Abstract

Introduction: Hemodialysis access has been considered as a support for end-stage renal patients. We measured the hemodynamic changes of the distal part of the upper extremity immediately after providing the AVGs in each method mentioned above and then compared the results.

Materials and Methods: This method is a novel one and hasn't been used in any other studies before. We studied 32 patients referring to the vascular surgery department of Rasht Razi Hospital between 2019- 2020 (using the Convenient Sampling method). This study is a case-control study.

Results: Out of 32 patients referred to the vascular surgery department of the hospital, 68.8% were male and their mean age was 53.41 ± 12.75 years, ranging from 28 to 78 years. Changes in distal arterial hemodynamics of the upper limb before and after clamping in dialysis venoarterial loop versus straight grafts are different in studied patients (P -value <0.05). The mean hemodynamic changes before and after clamping in loop venoarterial grafts (19.5000) are less than straight grafts. In dialysis patients who do not have any superficial vein suitable for venous arterial fistula, surgical placement of artificial grafts in the upper limb is appropriate.

Discussion: Based on the results of this study, the loop method seems to have lesser ischemic Complications and can be applied for dialysis patients.

Keywords: Intravenous arterial grafts, Arterial hemodynamic changes, Distal upper limb

Investigating the complications and success rate of femoral vein transposition in kidney failure patients as a way in dialysis vascular access

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Abstract

Introduction: One of the most important issues related to the advanced failure of kidneys is installation of suitable vascular access facilities for dialysis. In many patients who are undergoing dialysis for a long time the usual dialysis accesses cannot be used in the upper limbs due to its side-effects. Femoral vein transposition is one of the suitable methods to provide vascular access. It is less popular due its difficulty and insufficient experience regarding patency and complications.

Material and methods: In this study femoral vein transposition performed for patients under dialysis who were unable to implant a new access in the upper limb due to the loss of upper limb accesses and SVC vein complications between April and December 1401. The criteria for entering the study are the impossibility of establishing vascular access of the upper limb, the absence of ischemia (normal ABI) and the absence of stenosis in the inferior vena cava and the appropriateness of the femoral vein on the desired side (diameter above 6 mm). In this method, with a longitudinal medial and anterior thigh incision, the femoral vein is completely freed from the branching of the deep femoral vein to the popliteal vein, and after being transferred to the anterior and lateral subcutaneous tunnel of the thigh, anastomosis is given to the femoral artery.

Discussion: Among ten patients who were involved in our study half of them were male and the other half were female. Patients average age were 60.25 and average BMI were 27.38. Among them one case was resigned according to car accident. No cases of thrombosis; Ischemia and compartment were observed. The surgical wound was healed in five cases in less than one months and in two cases in three months and our cases were suffering from Local serous discharge. All patients started dialysis after three months. The initial success rate was 100%. Femoral vein transposition is a less complicated and acceptable method to perform dialysis in dialysis patients without vascular access in the upper limb.

Keywords: Poor access; Femoral vein transposition; Success rate

Comparison of bridge fistula in lower limb between synthetic graft and saphenous vein

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Abstract

Introduction: Chronic hemodialysis in patients with end-stage renal disease requires appropriate vascular access such as fistula in the limbs, the bridge fistula in the lower limb is one of the options in cases where fistula cannot be placed in the upper limb. The aim of this study is to compare synthetic bridge graft fistula (Gortex) and Saphenous vein graft.

Study method: Shahada Tajrish Hospital is one of the referral centers for patients who need access for dialysis. 125 patients who were treated with bridge fistula in this center were 75 men and 50 women. Most of the patients are referred to the admission unit for outpatients and are admitted to the operating room with previous preparation measures, and if they have a suitable saphenous vein, they are candidates for bridge fistula in the thigh, otherwise, a synthetic graft is used.

Results: In this study, in comparison, the percentage and chance of thrombosis in the vein was lower than that of synthetic graft. The percentage of infection in the synthetic graft was very significant compared to the saphenous one ($p < 0.05$).

Discussion: Basically, we showed that the arteriovenous fistula is an acceptable alternative to arteriovenous fistula grafting in the thigh for chronic hemodialysis, and the saphenous bridge vein ring arteriovenous fistula is superior in some aspects to the bridge Gortex ring arteriovenous graft.

Keywords: Bridge fistula, Synthetic graft, Saphenous vein

Evaluation of Complications and Success Rate and Kiasystem Patency Rate of arterioarterial Grafts in Dialysis Patients without Dialysis Vascular Access Running Head: Success Rate and openness Rate of arterioarterial Grafts

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Abstract

Chronic renal failure has been considered as one of the main health problems in Asian countries. The term ESRD is a stage of CKD that causes uremic syndrome with the accumulation of toxins, fluids, and electrolytes. In the present study, the complications and success rate and openness of arterial graftswere investigated in dialysis patients without dialysis vascular access. The present study is a cross-sectional and descriptive study. The statistical population of the study population was patients who did not have suitable large deep veins in 2019 and 2020 and were candidates for arterioarterialgraft. The sample pf present study included patients who had multiple accesses to the upper and lower limbs and dysfunction in these limbs. Ten samples were investigated in this study. Inclusion criteria of the study included the patients for whom upper and lower limb venography was performed. In the case of inferior and superior vena cava obstruction and failure to establish flow with endovascular intervention, they became candidates for arterioarterialgraft and entered the study. Data were summarized in SPSS22software using tables and charts. In this study, 6 patients were male and 4 were female. The mean age of the patients was 57.45 ± 8.6 years.

The largest number of patients (50%) had diabetes mellitus. One case of stenosis in anastomosis and one case of thrombosis were observed in the patients. The initial success rate in patients within 12 months was 80%. Arterioarterialgraft is a new technique and an alternative to specific conditions when other options fail. This technique can be considered for patients with central venous obstruction.

Keywords: Arterioarterialgraft, Dialysis patients, Dialysis vessels