

# A COMPARISON BETWEEN BRACHIOBASILIC FISTULA AND SUPERFICIALIZATION IN ONE STAGE OR TWO STAGES

By

<sup>2</sup>Abd El-Rahman Fathy Shahat, <sup>1</sup>Mohamed Abd El-Hamid Abd El-Rahman and <sup>2</sup>Abd El-Rahman Safwat Yousef

<sup>1</sup>Department of Vascular Surgery, Faculty of Medicine, Al-Azhar university, Cairo

<sup>2</sup>Department of General Surgery, Faculty of medicine, Al-Azhar university, Cairo

**Corresponding author:** Abd El-Rahman Fathy Shahat,

**Mobile:** (+02) 01063216325; **E-mail:** [abdobakr25@gmail.com](mailto:abdobakr25@gmail.com)

## ABSTRACT

**Background:** Hemodialysis continues to be the single most prevalent modality of kidney replacement therapy. Longevity on dialysis is directly proportional to the quality of dialysis, and that quality in turn depends on the reliability and integrity of the access to the patient's vascular system. This crucial connection is known as the hemodialysis vascular access.

**Objective:** To compare between brachiobasilic fistula and superficialization in one stage (basilic v. transposition) or two stages (basilic v. elevation) according to primary failure rate, primary patency rate, complication rate.

**Patients and Methods:** This prospective present study was carried out at Al Azhar university hospitals, El Mokattam health insurance hospital and El Mattaria teaching hospital on 30 patients with ESRD needing vascular access in the period from January 2020 to January 2021.

**Results:** Twelve fistulae were on the right side while eighteen patients had their fistulae on the left side. No significant difference was found. There were no significant differences between both groups in terms of the diameters of basilic vein and brachial artery among the patients. What really differs was the time to cannulate the fistula in both groups. It was earlier in Group A (p 0.007). Seroma had occurred in one patient (6.7%) in each group. Hematoma had occurred in one patient (6.7%) in Group A and two patients (13.3%) in Group B. Wound infection had occurred in one patient (6.7%) in each group. They all responded to conservative treatment. Thrombosis occurred in three patients (20%) in Group A; two patients had early thrombosis ( in the first 30 days) while one patient had thrombosis lately while two patients (13.3%) had thrombosis in Group B; one early and one late. Pseudoaneurysm occurred in only one patient in Group B (6.67%) which was impending rupture. So, it was ligated Mild steal syndrome occurred in one patient (6.67%) in each group which respond to medical treatment with no intervention. Regarding the fate of AVF, primary failure had occurred in four patients in Group A (26.7%) and in two patients in Group B (13.3%). In Group A, eleven patients (73.3%) had patent AVF after 3 months while ten patients (66.7%) had patent AVF after 6 months. In Group B, thirteen patients (86.7%) had patent AVF after 3 months while eleven patients (73.33%) had patent AVF after 6 months

**Conclusion:** The brachiobasilic arteriovenous fistula was a good option as a native access for regular hemodialysis in chronic renal failure patients either done in one stage or in two stages with favoring two stages procedure due to higher primary patency rate and less primary failure rate.

**Keywords:** End-stage renal disease, Brachiobasilic, fistula, superficialization.

## INTRODUCTION

Chronic kidney disease (CKD) is a progressive loss in renal function over a period of months or years. All individuals with a glomerular filtration rate of less than 15ml/min/1.73 m<sup>2</sup> for 3 months are classified as having end-stage renal disease (ESRD). (Arora *et al.*, 2013).

CKD and its last stage, ESRD is increasingly recognized as a public health problem with their attendant morbidity, mortality and increased health care costs. ESRD affects more than 1500 people per million population in countries with a high prevalence, such as the United States and Japan. About two-thirds of people with ESRD receive haemodialysis, one quarter have kidney transplants, and one tenth receive peritoneal dialysis. (Abbasi *et al.*, 2010).

In Egypt, the estimated annual incidence of ESRD is around 74 per million and the total prevalence of patients on dialysis is 264 per million. (El-Arbagy *et al.*, 2016).

Hemodialysis continues to be the single most prevalent modality of kidney replacement therapy. Longevity on dialysis is directly proportional to the quality of dialysis, and that quality in turn depends on the reliability and integrity of the access to the patient's vascular system. This crucial connection is known as the hemodialysis vascular access. (Lok *et al.*, 2020).

The advent of dialysis is not novel. In 1854, Thomas Graham described the ability to separate solutes through a semipermeable membrane via diffusion principles. (Cameron, 2012).

Further advancements in dialysate solutions, membranes, pumps, and anticoagulation would take almost a century before the first successful use of hemodialysis was documented during World War II by Willem Kolff, known as the father of hemodialysis, in 1944–1945. (Ing *et al.*, 2012).

Although these methods were successful for a number of patients suffering from acute kidney injury, it provided insufficient means for chronic dialysis secondary to the difficulties and complications of vascular access. (Ing *et al.*, 2012).

By 1960, Quinton, Dillard, and Scribner introduced the first chronic hemodialysis access source in the form of an external AV shunt. (Khwaja & Vin, 2015).

Dr. Belding Scribner, professor of medicine at the University of Washington, came up with the first permanent access device in the early 1960's. He was haunted by the death of a man he saw progressively improve with dialysis, but unfortunately all his arteries and veins were exhausted by cutdowns, a procedure where an incision was made and glass tubes were inserted into an artery and a vein to access the circulation. With the help of a biomedical engineer named Quinton, Dr. Scribner developed the Scribner shunt. It allowed access to the circulation for dialysis. Then, when not in use, it was connected together to form a loop on the outside of the body. David Dillard, a pediatric cardiac surgeon, implanted a shunt, made by Quinton, into the forearm of Clyde Shields, a 39-year-old machinist dying of chronic renal

failure secondary to chronic glomerulonephritis. Clyde lived for 11 years on dialysis, returned to work, and died from severe cardiovascular disease. (*Blagg, 2010*).

This rudimentary Teflon and Silastic tubing system connecting a peripheral artery and vein provided the capacity for high-flow dialysis through readily accessible means but was laden with complications of infection, dislodgement, and thrombosis. (*Blagg, 2010*).

This would provide the ground work for the development of a surgically created internal AV fistula by Brescia, Cimino, and Appel in 1966. They described a surgical fistula between the radial artery and the cephalic vein just proximal to the wrist, thereby eliminating the external shunt and enabling a high-flow system for hemodialysis. To this day, it remains the procedure of choice for patients with end-stage renal disease in need of chronic hemodialysis. (*Mousa et al., 2013*).

Kidney Disease Outcome Quality initiative suggests that if sufficient time and patient circumstances are favorable for a mature, usable AVF, such a functioning AVF is preferred to an AVG in incident hemodialysis patients due to fewer long-term vascular access events (e.g. thrombosis, loss of primary patency, interventions). (*Lok et al., 2020*).

KDOQI considers it reasonable to choose the site (location) of the AV-access after careful consideration of the patient's ESKD Life-Plan, potentially following the below paths:

1. Forearm AVF (Snuffbox or distal radiocephalic or transposed radiobasilic).
2. Forearm loop AVG or proximal forearm AVF (e.g. proximal radiocephalic, perforator-combinations) or brachiocephalic, per operator discretion.
3. Brachio basilic AVF or Upper arm AVG, per operator discretion. (*Lok et al., 2020*).

BB-AVF, since its first description in 1976 by Dagher et al. has been an important alternative for patients who have exhausted all possibilities for RC and BC AVFs in both arms. Two major surgical approaches have been described: one-stage and two-stage BB-AVF creations. (*Vrakas et al., 2013*).

The one-stage procedure involves dissecting and mobilizing the basilic vein, and transposing into the superficial subcutaneous layer before anastomosing it to the brachial artery all in one sitting. The two-stage procedure, on the contrary, only creates the brachio basilic anastomosis during the first stage, followed by subsequent dissection, mobilization, and transposition of the well-arterialized basilic vein to a more superficial plane at a later date (second stage). (*Kakkos, et al., 2010*).

The one-stage approach supposed to offer benefits of reduced total cost, shorter operation-to-cannulation time, and less exposure to perioperative risks. By contrast, the two-stage approach offers benefits of easier mobilization of the arterIALIZED basilic vein and interval selection of patients on whether to proceed to second stage (hence, filtering

out unsuitable candidates from being subjected to a potentially unnecessary extensive mobilization and larger postoperative wound). (*Lioupis et al., 2011*).

Because most data on BB-AVF patency rates have been derived from Western centers, we aimed to compare the patency rates between the one-stage and two-stage procedures in an Egyptian population.

### AIM OF THE WORK

To compare between brachio basilic fistula and superficialization in one stage (basilic v. transposition) or two stages (basilic v. elevation) according to primary failure rate, primary patency rate, complication rate.

### PATIENTS AND METHODS

This prospective present study was carried out at Al Azhar university hospitals, El Mokattam health insurance hospital, El Mattaria teaching hospital on 30 patients with ESRD needing vascular access in the period from January 2020 to January 2021.

**Inclusion criteria:** Patients with age between 12 - 75 years. Chronic renal failure needing vascular access. Patients giving consent for either type of operations.

**Exclusion criteria:** Suitable cephalic vein for fistula creation. Non-suitable basilic vein. Absence of consent to be involved in the study.

**After approval of Ethical committee of Faculty of medicine, Alazhar University, all patients were counseled and consented for the procedure, risk**

**and possible complications. They were subjected to:**

A full history was taken from all patients; the following points were taken into consideration: Personal history including age of the patient, sex, BMI and history of special habits as smoking, history of systemic diseases and comorbidities as diabetes, hypertension, ... etc.

Clinical examination of both arm veins, neck veins, arterial pulsations, blood pressure measurement, previous operative scars, .... etc.

Venous duplex to confirm unsuitability of cephalic vein and evaluate basilic vein patency and diameter.

After that procedure, risks, possible complications, advantages and disadvantages were explained to all patients before they were consented.

### Surgical technique:

The basilic vein runs on the medial aspect of the arm. It only remains superficial for a short distance in the arm before coursing beneath the deep fascia to run up the medial aspect of the arm alongside the medial cutaneous nerve of the forearm, parallel and superficial to the course of the brachial artery in the bicipital groove.

The subfascial position of the basilic vein means that it is protected from venipuncture thereby ensuring that it is of good quality. but unfortunately, if the basilic vein is left in this anatomical position and anastomosed to the brachial artery, only a short length of vein would be available for venipuncture. A much longer conduit can be created by

dissecting the basilic vein from its bed and transposing it into a more superficial position in the subcutaneous fat.

You can make superficialized basilic vein in brachiobasilic fistula through different ways one stage transposition, one stage elevation, two stage elevation, two stages transposition or minimally invasive endoscopic procedures.

Here we will discuss and compare the two techniques one stage transposition and two stages elevation.

#### **One-stage transposition procedure:**

The procedure is usually performed with the patient under local anesthesia, sometimes in combination with an interscalene block anesthetic. The preparation must include the shoulder and axilla. The basilic vein is found just anterior to the medial epicondyle of the humerus. Through small multiple skip incisions along the course of the vein the basilic vein was mobilized after basilic vein tributaries are ligated and the vein is transected as distal as possible. The vein is cannulated and distended with heparinized saline solution to be certain there is no resistance to flow. Dissection over the brachial artery and the artery is secured just proximal to the bifurcation. Tunnel made by large curved aortic clamp or tunneling device the vein is carefully relocated through the tunnel with care not to kink, twist or traumatize the vein and after controlling the artery, an arteriotomy of 4 to 6 mm maximal length is made. The length of the arteriotomy is limited to decrease the incidence of arterial steal. The artery is flushed proximally and distally with heparinized saline to avoid thrombosis during the anastomosis. The AV anastomosis is performed between the

side of the artery and the end of the vein. The AV anastomosis is performed using a 6-0 monofilament nonabsorbable (prolene) continuous suture.

#### **Two-stages elevation procedure:**

In the two-stage procedure, During the first stage, a limited incision is created in the antecubital fossa usually under local anesthesia, and both the basilic vein and the brachial artery are dissected free. After identification of the vein, the distal end is transected and flushed with heparinized saline. After controlling the artery, an arteriotomy of 4 to 6 mm maximal length is made. The length of the arteriotomy is limited to decrease the incidence of arterial steal. The artery is flushed proximally and distally with heparinized saline to avoid thrombosis during the anastomosis. The AV anastomosis is performed between the side of the artery and the end of the vein. The AV anastomosis is performed using a 6-0 monofilament nonabsorbable (prolene) continuous suture, and the incision is closed.

The second stage procedure is performed 4 weeks later during which the arterialized basilic vein is elevated to a more anterior and superficial position over the biceps muscle either under local or general anesthesia. An incision is made over the course of the basilic vein in the proximal upper arm, starting approximately 1.5 cm above the arteriovenous anastomosis in the antecubital fossa extended proximally to the axilla. This involves dissection of the basilic vein along its course, to allow full mobilization of the basilic vein up to its confluence with the brachial vein. During dissection of the basilic vein, all

tributaries are ligated. A subcutaneous flap will be made by undermining the anterior Skin edge. elevating the mobilized vein and closing the fascia and subcutaneous tissue below it.

**Follow up:**

Patients underwent one stage procedure will be followed postoperative as following: 1<sup>st</sup> week for detection of post operative complications. 2<sup>nd</sup> week to remove stitches. 6<sup>th</sup> week to assess readiness for puncturing.

While patients underwent two stages procedures will be followed postoperatively as following: 1st week for detection of post operative complications. 2nd week to remove stitches of first procedure. 4th week to assess vein maturation and prepare for the second procedure. 5th week to for detection of post operative complications. 6th week to remove stitches and to assess readiness for puncturing.

**Definitions:**

Primary patency (intervention-free access survival) was defined as the interval from time of access placement to any intervention designed to maintain or re-establish patency.

A functional AVF is an access that is able to deliver a flow rate of 350 to 400 mL/min without recirculation for the total duration of dialysis.

A nonfunctional AVF is an access that is not being successfully used for hemodialysis, regardless of whether it is patent.

Primary failure was defined as an AVF that was never used for dialysis. This definition includes: Inadequate maturation, Early thrombosis, Failure of first cannulation, and other complications, such as ischemia or infection, which made it unusable. (*Kim et al., 2016*).

**RESULTS**

Regarding sex, 17 patients were male while 13 patients were female with no significant difference. Age was slightly higher in Group B than Group A ( $56.93 \pm 8.06$  vs.  $51.87 \pm 10.7$  years) with no

significant difference. Patients in Group B had statistically larger body mass index than Group A ( $p < 0.001$ ). No significant differences.

**Table (1): Demographic data in both groups (N=30)**

| Demographic data                          | Group A (N=15)   | Group B (N=15)   | p value            |
|---|------------------|------------------|--------------------|
| <b>Sex</b>                                |                  |                  |                    |
| <i>Male</i>                               | 8 (53.3%)        | 9 (60%)          | 0.713 <sup>^</sup> |
| <i>Female</i>                             | 7 (46.7%)        | 6 (40%)          |                    |
| <b>Age (years)</b>                        |                  |                  |                    |
| <i>Mean ± SD</i>                          | $51.87 \pm 10.7$ | $56.93 \pm 8.06$ | 0.155 <sup>#</sup> |
| <i>Range</i>                              | 40-69            | 46-72            |                    |
| <b>Body mass index (kg/m<sup>2</sup>)</b> |                  |                  |                    |
| <i>Mean ± SD</i>                          | $24.6 \pm 1.76$  | $27.6 \pm 2.47$  | 0.001 <sup>#</sup> |
| <i>Range</i>                              | 23-28            | 25-33            |                    |
| <b>Co morbidities</b>                     |                  |                  |                    |
| <i>No</i>                                 | 6 (40%)          | 4 (26.7%)        | 0.439 <sup>^</sup> |
| <i>Diabetes mellitus</i>                  | 5 (33.3%)        | 4 (26.7%)        | 0.690 <sup>^</sup> |
| <i>Hypertension</i>                       | 5 (33.3%)        | 8 (53.3%)        | 0.269 <sup>^</sup> |

Data in N (%)      Mean ± SD      # Student t test, ^ pearson chi square

Twelve fistulae were on the right side while 18 patients had their fistulae on the left side. No significant difference was found. There were no significant differences between both groups in terms

of the diameters of basilic vein and brachial artery among the patients. What really differs was the time to cannulate the fistula in both groups. It was earlier in Group A ( $p < 0.007$ ).

**Table (2): Details of AV fistula in both groups (N=30)**

| AV fistula                           | Group A (N=15)  | Group B (N=15)  | p value             |
|--------------------------------------|-----------------|-----------------|---------------------|
| <b>Side</b>                          |                 |                 |                     |
| <i>Right</i>                         | 8 (53.3%)       | 4 (26.7%)       | 0.136 <sup>#</sup>  |
| <i>Left</i>                          | 7 (46.7%)       | 11 (73.3%)      |                     |
| <b>Basilic vein diameter (mm)</b>    |                 |                 |                     |
| <i>Mean ± SD</i>                     | $4.42 \pm 1.12$ | $4.65 \pm 1.09$ | 0.567 <sup>#</sup>  |
| <i>Range</i>                         | 2.5-6.4         | 2.4-6.3         |                     |
| <b>Brachial artery diameter (mm)</b> |                 |                 |                     |
| <i>Mean ± SD</i>                     | $4.57 \pm 1.79$ | $4.51 \pm 0.68$ | 0.901 <sup>#</sup>  |
| <i>Range</i>                         | 2-8.5           | 3-5.5           |                     |
| <b>Time to cannulate (weeks)</b>     |                 |                 |                     |
| <i>Mean ± SD</i>                     | $7.2 \pm 0.68$  | $7.93 \pm 0.7$  | 0.007 <sup>#*</sup> |

| Range  | 6-8  | 7-9 |  |
|--|--|-----|--|
| Data in N (%) Mean $\pm$ SD # Student t test   | ^ pearson chi square, Significant p value $\leq$ 0.05  |     |  |
| Seroma had occurred in one patient (6.7%) in each group. Hematoma had occurred in 1 patient (6.7%) in Group A and 2 patients (13.3%) in Group B. | patient had thrombosis lately while 2 patients (13.3%) had thrombosis in Group B; one early and one late.                  |     |  |
| Wound infection had occurred in 1 patient (6.7%) in each group. They all responded to conservative treatment.                                    | Pseudoaneurysm occurred in only one patient in Group B (6.67%) which was impending rupture. So, it was ligated.            |     |  |
| Thrombosis occurred in 3 patients (20%) in Group A; 2 patients had early thrombosis (in the first 30 days) while one                             | Mild steal syndrome occurred in one patient (6.67%) in each group which respond to medical treatment with no intervention. |     |  |

**Table (3): Complications among the patients in both groups (N=30)**

| Complications          | Group A (N=15) | Group B (N=15) | p value            |
|------------------------|----------------|----------------|--------------------|
| <i>Seroma</i>          | 1 (6.7%)       | 1 (6.7%)       | 1 <sup>^</sup>     |
| <i>Hematoma</i>        | 1 (6.7%)       | 2 (13.3%)      | 0.543 <sup>^</sup> |
| <i>Wound infection</i> | 1 (6.7%)       | 1 (6.7%)       | 1 <sup>^</sup>     |
| <i>Thrombosis</i>      | 3 (20%)        | 2 (13.3%)      | 0.624 <sup>^</sup> |
| <i>Pseudoaneurysm</i>  | 0 (0%)         | 1 (6.7%)       | 0.309 <sup>^</sup> |
| <i>Steal syndrome</i>  | 1 (6.7%)       | 1 (6.7%)       | 1 <sup>^</sup>     |

Data in N(%), <sup>^</sup> Pearson Chi-square

Regarding the fate of AVF, primary failure had occurred in 4 patients in Group A (26.7%) and in 2 patients in Group B (13.3%). In Group A, 11 patients (73.3%) had patent AVF after 3 months while 10

patients (66.7%) had patent AVF after 6 months. In Group B, 13 patients (86.7%) had patent AVF after 3 months while 11 patients (73.33%) had patent AVF after 6 months.

**Table (4): Fate of AVF in both groups (N=30)**

| Fate of AVF                        | Group A (N=15) | Group B (N=15) | p value            |
|------------------------------------|----------------|----------------|--------------------|
| <i>Primary Failure</i>             | 4 (26.7%)      | 2 (13.3%)      | 0.361 <sup>^</sup> |
| <i>Primary Patency at 3 months</i> | 11 (73.3%)     | 13 (86.7%)     | 0.361 <sup>^</sup> |
| <i>Primary Patency at 6 months</i> | 10 (66.7%)     | 11 (73.3%)     | 0.69 <sup>^</sup>  |

## DISCUSSION

In Al Azhar university hospitals, El Mokattam health insurance hospital, El Mattaria teaching hospital thirty patients with ESRD underwent brachiobasilic arteriovenous fistulae in the period from January 2020 to January 2021, one stage procedure for fifteen patients and two stages procedure for another fifteen patients, seventeen males and thirteen females ranged from forty years old to

seventy years old with mean age 51 for one stage and 56 for two stages compared to *Reynolds et al. (2011)* study which include 90 patient (60 in one stage and 30 in two stage) ,also this compared to *Vrakas et al., (2013)* study which include 149 patient with 65 patient for one stage and 84 patient for two stage,49 female for one stage and 52 female for two stage and mean age was 58 year for one stage and 63 year for two stage. In study of



*Robertson et al. (2013)* was 73 patient 29 for one stage and 44 for two stages. In our study, there were 57% males and 43 % females. Compared to *Agarwal et al. (2014)* there were 45.83% males and 54.17% females and it was 42% (61) were created in one stage, while 58% (83) were created in two stages.

The procedure has been done in left arm for 60% of patients and right arm for 40% of patients compared to the study of *Vrakas et al. (2013)* was left arm in 66.44% and right arm in 33.56%, also in the study of *Abd El Mabood et al. (2014)* was left arm in 82% and right arm in 18%, and in the study of *Agarwal et al. (2013)* left in 60% and right arm in 40%.

In our study the time interval in two stage procedure was 7.9 weeks and 7.2 in one stage procedure. in the study of *Reynolds et al. (2011)* was 13 weeks for one stage and 19 weeks for two stages, in the study of *Vrakas et al. (2013)* was 12.8 weeks, and in the study of *Robertson et al. (2013)* was 14.4 weeks.

#### **Complications were as follows:**

Thrombosis 20 % in one stage procedure and 13.3 % in two stages. *Vrakas et al. (2013)* showed thrombosis 4% in one stage while were thrombosis 1% in two stages procedure. *Abd El Mabood et al. (2014)* showed thrombosis 4% in one stage while thrombosis was 12% in two stages.

Hematoma was 6.7% in one stage and 13.3 % in two stages, Seroma as well as wound infection was 6.7% in both groups.

*Vrakas et al. (2013)* showed hematoma 3%, and wound infection 3% in one stage while hematoma 3%, and wound infection 2% in two stages procedure. *Abd El*

*Mabood et al. (2014)* showed hematoma 8% in one stage while hematoma 4% in two stages. In *Ghaffarian et al. (2017)* wound infection was 7.4% in one stage and 6.9% in two stages.

Steal syndrome was 6.7 % in both groups, pseudoaneurysm was 6.7% in the two stages group. *Vrakas et al. (2013)* showed steal syndrome 2 % in one stage and 3 % in two stages. *Reynolds et al. (2011)* showed steal syndrome 2.1 % in one stage and 4.5 % in two stages. In *Ghaffarian et al. (2017)* it was 7.4% in one stage and 1.4% in two stages.

Primary patency rate at three months was 73.4 % in one stage and 86.6 % in two stages. At 6 months it was 66.6 % in one stage and 73.3% in two stages. In the study of *Reynolds et al. (2011)* it was 78% for one stage and 84% for two stages at one year, *Robertson et al. (2013)* showed 76% in one stage and 84% in two stages. *Agarwal et al. (2013)* showed 69 %, 52 % for one stage and 58 %, 35 % for two stages at 3 months, 6 months respectively. In *Ghaffarian et al. (2017)* at 12 months of follow-up, the primary patency was 56% for one-stage and 72% for two-stages.

#### **CONCLUSION**

The brachiobasilic fistula is an alternative vascular access that can delay the use of synthetic AVG in patients in whom AVF creation is difficult in the forearm and elbow. The BB fistula is considered as an option when either previous fistulae have failed, or when the cephalic vein is unsuitable for use.

It is obvious that each procedure has advantages and disadvantages. The one-stage procedure offers the benefits of a

single operation with earlier functional patency and possible shorter duration with a central venous catheter. The advantage of a two-stage procedure is the ease of mobilization of a larger “arterialized” vein, rendering it less susceptible to torque and devascularization during mobilization. In case of early failure, the patient is spared a general anesthetic and significant surgical dissection. However, the two-stage procedure necessitates two operations, which may affect operating theater capacity and delay establishment of permanent access.

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## دراسة مقارنة بين الناصور الشرياني الوريدي بين الشريان العضدي والوريد البازيلي مع التسطیح على مرحلة و على مرحلتين

عبد الرحمن فتحى شحات<sup>1</sup>، محمد عبد الحميد عبد الرحمن<sup>2</sup>،

عبد الرحمن صفوت يوسف<sup>1</sup>

<sup>1</sup>قسم الجراحة العامة، كلية الطب، جامعة الأزهر

<sup>2</sup>قسم جراحة الأوعية الدموية، كلية الطب، جامعة الأزهر

E-mail: [abdobakr25@gmail.com](mailto:abdobakr25@gmail.com)

**خلفية البحث:** يحدث الفشل الكلوى المزمن عندما يصل اعتلال الكليتين إلى مرحلة متأخرة، بحيث تصبح الكليتان غير قادرتين على أداء وظيفتهما بالشكل الطبيعي لتلبية احتياجات الجسم. وفي المرحلة النهائية من الفشل الكلوي، يحتاج المرضى إلى الغسيل الكلوي أو عملية زراعة الكلى للبقاء على قيد الحياة. ويعتبر الغسيل الكلوي هو أكثر أنواع العلاج شيوعاً واستخداماً لهؤلاء المرضى. تتنوع المنافذ التي يتم عن طريقها الغسيل الكلوي الدموي ولكن يظل أهمها وأفضلها هو إجراء الناصور الشرياني الوريدي (عمل وصلة بين شريان ووريد بغرض الغسيل). وفي حال عدم توفر أوردة مناسبة بالذراعين أو أنها قد استهلكت بسبب سحب التحاليل المعملية المتكرره يصبح الوريد البازيلي هو الخيار الأفضل لعمل الناصور الشرياني الوريدي قبل التحول لاستخدام الوصلة صناعية أو تركيب القساطر المركزية

**الهدف من البحث:** تهدف هذه الدراسة إلى مقارنة نتائج عملية إجراء الناصور الشرياني الوريدي عن طريق توصيل الشريان العضدي مع الوريد البازيلي وتسطیح الوريد البازيلي إما فى مرحلة واحدة أو مرحلتين بحيث يكون مناسباً لإستخدامه فى الغسيل الكلوي.

**المرضى و طريقة البحث:** وقد اشملت هذه الدراسة على ثلاثين مريضاً يعانون من الفشل الكلوي المزمن ويحتاجون لمنفذ للغسيل الكلوي الدموي وليس لديهم

أوردة سطحية بالذراعين صالحة لعمل هذا الناصور باستثناء الوريد البازيلي. وقد تم تقسيم هؤلاء المرضى إلى مجموعتين كما يلي:

**مجموعه (أ):** اشتملت على خمسة عشر مريضاً خضعوا لإجراء هذه العملية مع تسطیح الوريد البازيلي على مرحلة واحدة.

**مجموعه (ب):** واشتملت أيضاً على خمسة عشر مريضاً أيضاً ولكنهم خضعوا لإجراء هذه العملية مع تسطیح الوريد البازيلي على مرحلتين.

وقد بلغ عدد المرضى من الرجال في المجموعتين سبعة عشر رجلاً بينما بلغ عدد السيدات ثلاثة عشر سيدة. وقد تراوحت أعمارهم ما بين الأربعين إلى السبعين عاماً.

**نتائج البحث:** بلغت نسبة الفشل الأولى للناصرور أربعة حالات (26.7%) في المجموعه (أ) بينما بلغت حالتين (13.3%) في المجموعه (ب). بلغت نسبة النجاح الأولى في مرضى المجموعه (أ) بعد مرور ثلاثة شهور و ستة شهور من إجراء العملية (73.3%، 66.7%) على التوالي بينما بلغت هذه النسبة في مرضى المجموعه (ب) (86.7%، 73.3%) على التوالي.

**أما المضاعفات فقد كانت كالآتي:** حدوث تجلط بالدم داخل الناصور في ثلاثة حالات (20%) في مرضى المجموعه (أ)، بينما وصلت النسبة إلى حالتين (13.3%) في مرضى المجموعه (ب).

حدوث التجمع الدموي في حالة واحدة (6.7%) في مرضى المجموعه (أ) بينما حدث في حالتين (13.3%) في مرضى المجموعه (ب).

حدوث العدوى السطحية في حالة واحدة (6.7%) في كل من المجموعتين (أ، ب) على حده.

حدوث التمدد الكاذب في حالة واحدة (6.7%) في مرضى المجموعه (ب).

**الخلاصة:** الناصور الشرياني الوريدي بين الشريان العضدي و الوريد البازيلي يمكن إجرائه بطريقتين مختلفتين وكلاهما يعتبر وسيلة جيدة ومناسبة للغسيل الكلوي الدموي. ولقد ثبت من خلال هذه الدراسة أن إجراء ذلك الناصور على مرحلتين يكون أفضل من إجرائه على مرحلة واحدة لأنه يعطى نسبة نجاح أولية كبيرة.

**الكلمات الدلالية:** الفشل الكلوي المزمن، الناصور، العضدي البازيلي، تسطيح.