

# FOLLOW UP WITH DOPPLER ULTRASOUND OF ASYMPTOMATIC ARTERIOVENOUS FISTULA (AVF) AFTER RENAL BIOPSY (RB)

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## INTRODUCTION

RB is an essential percutaneous technique in Nephrology that entails major and minor complications, one being the AVF which is usually asymptomatic and underdiagnosed because of the absence of routine Doppler examination post RB. We analyzed the natural history of asymptomatic AVF post RB of native kidney (NK) and transplanted (RT) detected by Doppler examination following RB.

## METHODS

We analyzed the presence of AVF on 327 RB between January 2011 and December 2014 included in our database. 47 (14%) RB developed AVF detected by Doppler ultrasound performed at 24h post RB. We studied the following data: AVF size and its relation to the needle caliber and time to spontaneous closure and its relationship to the AVF size. All RB were realtime ultrasound guided RB performed with a biopsy gun (Acecut TSK, Japan), the RT caliber 16G and 14G in the NK.

## RESULTS

- 45 AVF were asymptomatic (96%), whereas 2 (4.2%) had to be embolized by their large size. Of the 45 asymptomatic AVF, 28 were of RT (62.2%). 69% were male. AVF 28 (62%) were followed until its closure with Doppler. 75% sized <1cm and corresponded to RT (16 G needle).
- We noticed that the 50% of AVF had closed at 3 months post RB at an average of 49 days. AVF with a size between 1.1 and 1.9 cm (17.7% of the total) took longer time to close (mean 67 days).
- Among the 17 patients without follow up five had died, 3 lost the renal graft and 9 were lost in the evolution. Seven of the 9 patients without follow up were studied by Doppler after contacting them by phone, 28 months postbiopsy. In the seven AVF had spontaneously closed

### AVF SIZE

cm	n
< 0.4	14
0.5-1	20
1.1-1.9	8
2-2.9	1
Unavailable	2
Total	45

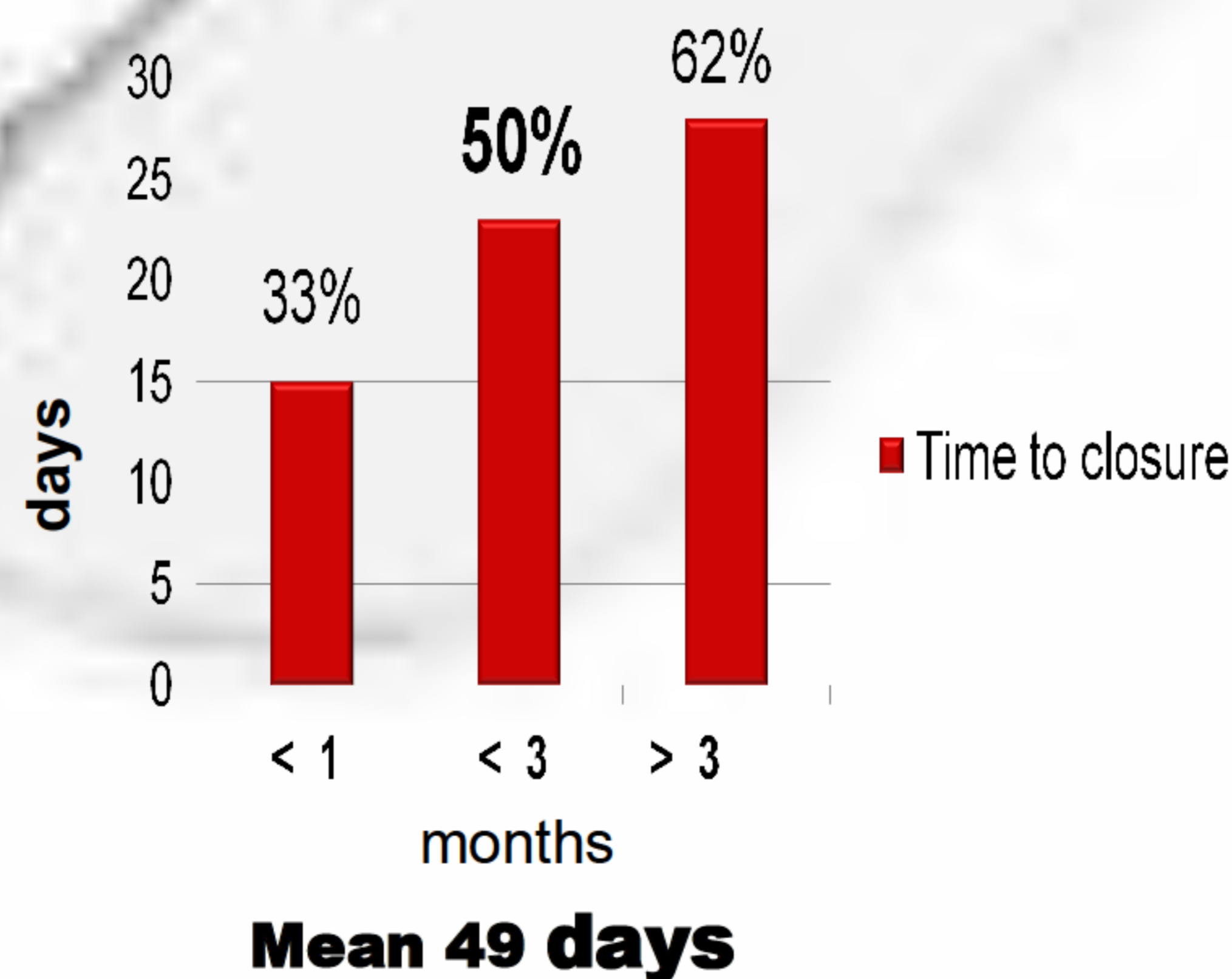
75% measured <1 cm

### AVF SIZE AND TYPE OF BIOPSY

	cm	Range	n
Transplant	0.6	0.3-1.9	28
Native Kidney	0.96	0.2-2.8	20

AVF size is associated with needle

### SPONTANEOUS CLOSING TIME



### CLOSING TIME AND SIZE

Size (cm)	Days (mean)	N
< 0.4	48	14
0.5-1	46	20
1.1-1.9	67	8
2-2.9	13	1

Larger AVFs close later

## CONCLUSIONS:

Contrary to published, AVF after RB is a frequent complication but asymptomatic and rarely requires surgery. All asymptomatic AVF closed spontaneously. The size of AVF was related with the caliber of the needle and with the time to close. No AVF grew in evolution. The routine use of Doppler following RB is essential to identify and standardizing management of AVF .

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