

Outcomes of The MICRA Leadless Pacemaker in the Octogenarian Population: US URBAN EXPERIENCE IN AN ACADEMIC TERTIARY CENTER

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Background: The MICRA leadless pacemaker was shown to be a safe and an effective alternative to traditional transvenous pacemakers. Leadless pacemakers are recommended for patients who are at high risk for device pocket infections, like the elderly. In this study, we aim to assess if we are following these guidelines by comparing implantation rates among the octogenarian urban population as compared to younger patients.

Methods: All consecutive patients with standard indications for pacemaker placement at a large urban center (n=92) who underwent the MICRA device placement were retrospectively included in this study. The patients were divided into 2 groups: those above 80 years old and those below 80. Baseline characteristics, periprocedural and follow-up outcomes were then compared.

Results: A total of 92 patients were included in this study; of which 46 were Octogenarian (89 ± 5 years old, 63% female, 65% Black, 15% Hispanic) and 46 were <80-year-old (65 ± 13 years old, 28% female, 56% Black, 17% Hispanic). Women who received a MICRA implantation were 4 times more likely to be older than 80 years old (OR 4.3, 95% CI[1.8,10.4]). Particularly, black women were 3 times more likely to be ≥80 years old at the time of implant (OR 3.1, 95 CI[1.1,9.5]). Indications for implantation were sinus node dysfunction (33% vs 44%, p=0.283), atrial fibrillation with bradyarrhythmia (33% vs 22%, p=0.241) and atrioventricular block (34% vs 34%, p=1.0) for those ≥80 vs <80 years, respectively. Fluoroscopy time was similar between the two age groups (3.3 ± 2.2 vs 2.5 ± 1.2, p=0.55), for ≥80 vs <80 years, respectively. The mean follow-up was 20 ± 13 and 20 ± 11 months (p=0.493), for ≥80 vs <80 years, respectively. No complications were noted during any of the procedures in both groups. No device or procedure related deaths were noted.

Conclusion: In minority patients, both men and women, older than 80 years old, the MICRA leadless pacemaker is a safe and effective alternative to traditional transvenous pacing.

Table 1. Patient and Procedural Characteristics			
	≥80 years old (n=46)	<80 years old (n=46)	<i>p-value</i>
Age (years)	89 ± 5	65 ± 13	<0.001
Sex	29 Females (63%) 17 Males (37%)	13 Females (28%) 33 Males (72%)	<0.001 <0.001
Ethnicity (n=70)	n=34	n=36	
<i>Black</i>	22 (65%)	20 (56%)	0.435
<i>Hispanic</i>	5 (15%)	6 (17%)	0.882
<i>White</i>	5 (15%)	7 (19%)	0.599
<i>Other</i>	2 (6%)	3 (8%)	0.691
Follow-up (months)	20 ± 13	20 ± 11	0.493
Hypertension	42 (91%)	35 (76%)	0.048
Diabetes	15 (33%)	13 (28%)	0.65
Coronary Artery Disease	9 (26%)	9 (25%)	0.445
Congestive Heart Failure	12 (35%)	8 (22%)	0.131
LVEF (%)	58% ± 14%	59% ± 9%	0.405
Indications			
<i>Atrial Fibrillation with Bradyarrhythmia</i>	15 (33%)	10 (22%)	0.241
<i>Atrioventricular Block</i>	16 (34%)	16 (34%)	1
<i>Sinus Node Dysfunction</i>	15 (33%)	20 (44%)	0.283
<i>Procedure Characteristics and Complications</i>			
Fluoroscopy time (min)	3.3 ± 2.2	2.5 ± 1.2	0.55
Midseptal Position	33/33 (100%)	36/36 (100%)	n/a
Major complications	0 (0%)	0 (0%)	n/a

Cardiac perforation	0 (0%)	0 (0%)	n/a
Incision Site Hematoma	0 (0%)	0 (0%)	n/a
Pseudoaneurysm	0 (0%)	0 (0%)	n/a

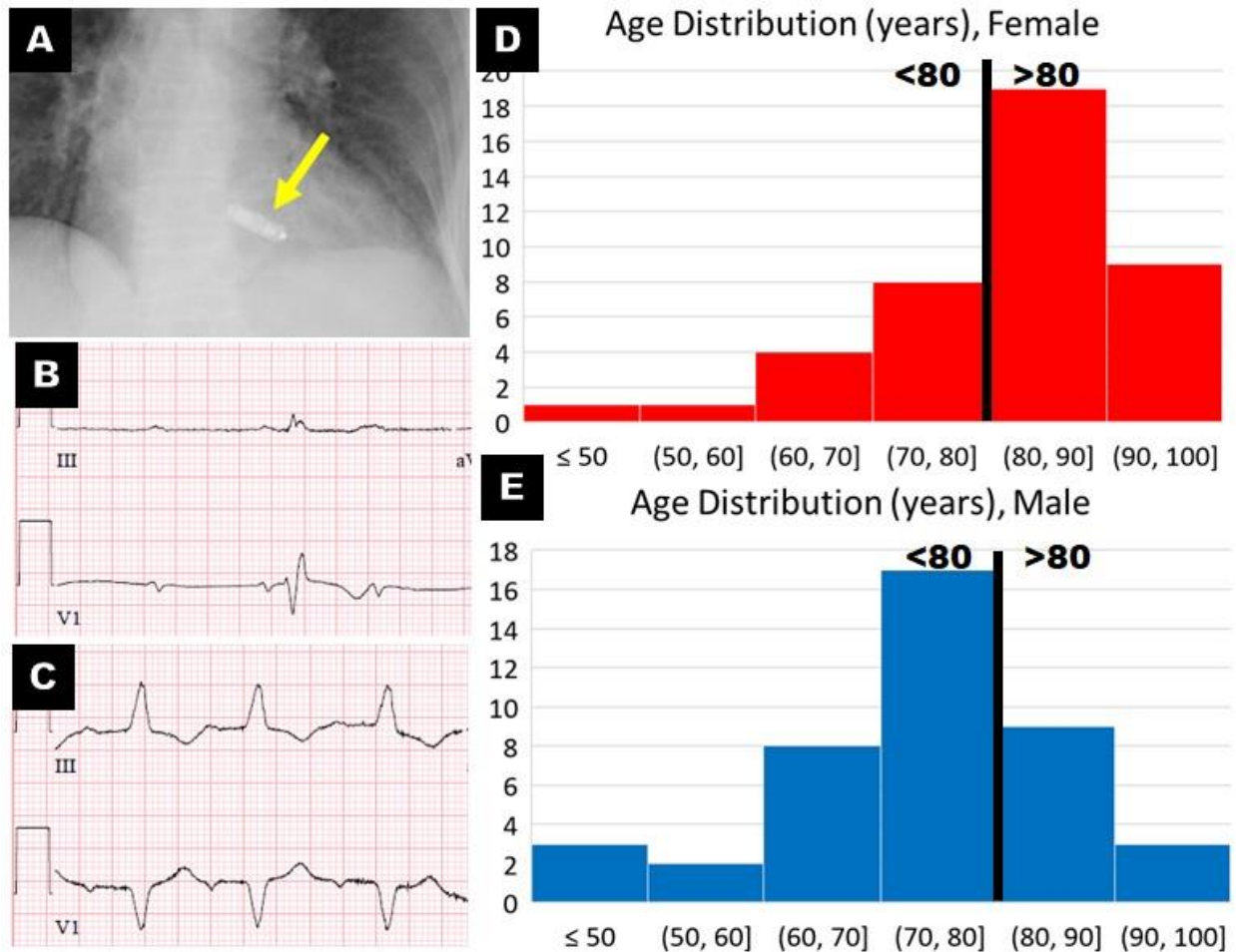


Figure 1. A. The MICRA leadless pacemaker in the RV (arrow). B. Baseline ECG with complete heart block. C. Post-implantation ECG showing ventricularly paced rhythm. D and E show the age distribution.