

Walking Pre-Heart Transplant Patients with Percutaneously Placed Axillary-Subclavian Intra-Aortic Balloon Pump



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Background/Introduction

Intra aortic Balloon Pump (IABP) is one of the treatments for end stage heart failure patients waiting for a heart transplant who are non responsive to medications. Functional independence decline as a result of mandatory bed rest for traditional femoral IABP. Percutaneously placed Axillary-Subclavian Intra-aortic Balloon Pump (Axillary IABP)^{Estep,et al} enable these patients to be mobilized thereby maintaining or increasing their functional independence while waiting for a heart transplant.

Days to Mobilization Post IABP Insertion
1.39 (± 1.41) days

Number of Mobilizations:
1.7(±2) per day

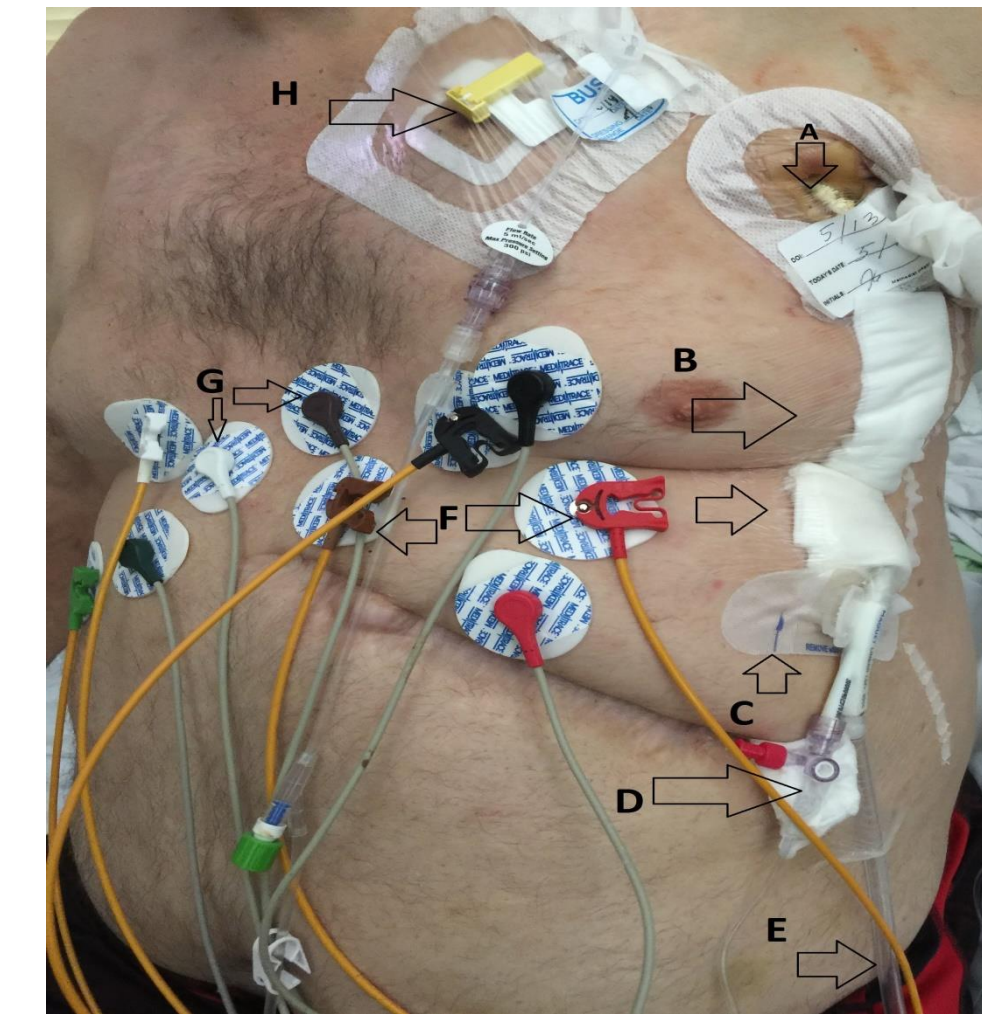
PAIABP Pre-transplant Therapy Duration:
21.1 (±25.4) days

Patient Demographics

Variable	N	%
Age	56.1±10.2	
Gender		
Male	35	77.80%
Female	10	22.20%
BMI	27.9±4.9	
Race		
Caucasian	28	62.2
Black	10	22.2
Hispanic	5	11.1
Asian	1	2.2
Other	1	2.2
Mortality		
Alive	37	82
Deceased	8	18
Bridge To Transplant	45	100
Comorbidities		
Amyloidosis	6	13
CKD	16	35
Cardiomyopathy	27	60
D.Mellitus	20	44
COPD,Pulm.HTN	17	38
Heart Failure	45	100
(NYHA Class 3b-4)		
Previous transplant	3	7

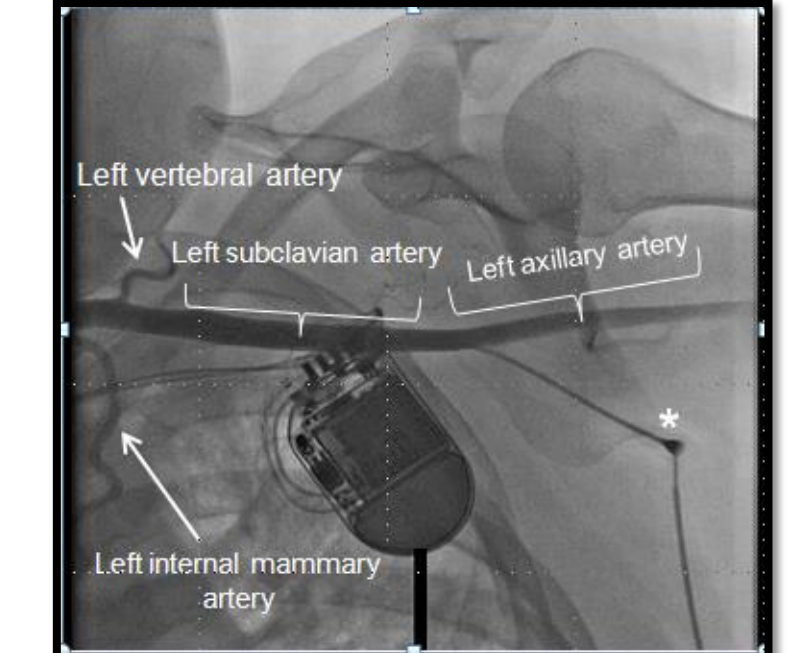
- femoral IABP support(18.6%)^{Gjesdal,et al}
- Site infection, n-1(2%) vs. femoral insertion(30%)^{Gjesdal, et al}
- Bleeding related complications(4% vs 4.6%)similar to observations based on extended IABP support^{L.Estep, et al}
- Pressure ulcer, 0
- Increased incidence of Axillary IABP malposition requiring bedside repositioning/cath lab IABP exchange (44%).^{Estep, et al}

Result



Axillary IABP Placement

- A- Axillary IABP insertion site with clear CHG dressing; the catheter and introducer sutured to the skin
- B- Clear adhesive dressings help stabilize the IABP catheter; the gauze prevents skin irritation.
- C- Adhesive anchor at the hub of IABP catheter
- D- arterial line to bedside monitor for blood pressure monitoring
- E- IABP gas(Heium) line for inflating/ deflating the IABP
- F- EKG leads to the IABP console(controller)
- G- EKG leads to the bedside monitor



Fluoroscopic view of the IABP (*) into the left axillary-subclavian artery. (reprinted with permission from Dr. J. Estep)

WEDDING PROMISE



Patient with Axillary IABP dancing with his daughter on her wedding day.



Weak patient walking with walker, two RN's assisting



Two patients walking and meeting in the CICU hallways

Result/Implications

- Pre heart transplant Axillary IABP patients can be mobilized thereby increasing their functional independence
- Axillary IABP decreased complications compared to traditional femoral IABP insertion, but has increased tendency for malposition due to increased patient mobility compared to the femoral IABP.

Limitations:

- Single hospital results
- Small sample size
- Incomplete data on some charts

Future Action

Further research is needed on:

- the effect of this procedure in the post operative ICU length of stay.
- total post operative hospital length of stay.
- the effect of mobility vs. bedrest on these patients' emotional/psychological well being.

References

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Acknowledgments

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Purpose/Objectives/Hypothesis

1. Demonstrate that PAIABP therapy allows mobilization while awaiting transplantation, as compared to traditional femoral inserted IABP.
2. Evaluate PAIABP therapy rate of complications vs. femoral inserted IABP.

Methods

Design

This is a retrospective study of pre-heart transplant PAIABP patients (n=45) in CICU from 2007 to 2013. Mobility for our study includes dangling, getting out of bed to the chair, and walking to the bathroom, inside the room, and in the hallways.

Setting

Coronary Intensive Care ICU (CICU)
Houston Methodist Hospital

Methods

Data are presented as mean (standard deviation) for continuous variables, and number (percentage) are reported for categorical variables.