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RESEARCH ARTICLE

PRESENTATIONS AND OUTCOMES OF AORTOFEMORAL BYPASS GRAFTING

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Aortofemoral Bypass (AFB), Intermittent Claudication (IC), Critical Limb Ischaemia (CLI)

Abstract

Objectives: The aim of the study is to study presentations and clinical outcomes in patients undergoing Aortofemoral Bypass Grafting Surgery (AFB).

Design: This was a Hospital based prospective study.

Materials And Methods: During 18 months period , 20 patients (mean age = 56 years) underwent AFB. Indications comprised of occlusive disease with Intermittent Claudication (IC) (n=10), Critical Limb Ischaemia (CLI)(n=4), Resting Pain (RP) (n=4) and Tissue Loss (TL) (n=2).

Results: From Jan 2023 to June 2024, AFB was performed more frequently for IC (50%) vs rest of other indications. 30 day observations / follow up showed infection in 5%, Graft occlusion in 5% for which patient underwent emergency graft thrombectomy, Amputation in 10% due to gangrenous changes and 15% mortality. Graft patency was found to be triphasic in 90% cases. Hypertension was leading risk factor (85%) followed by Diabetes Mellitus(70%) and smoking (65%). Predictors of morbidity included CKD (25%), CAD (25%), COPD (20%), CVA (20%).90% Patients were operated via thoracotomy approach and 10% were operated via abdominal approach depending on level of aortic thrombus. 20% of patients had previous history of endovascular interventions followed by stent occlusion.

Conclusion: In era of endovascular intervention, Aortofemoral Bypass Surgery is more likely to be performed for Intermittent Claudication and graft patency has a better outcome.

Introduction:-

Aortofemoral bypass grafting (AFB) is the gold standard surgical procedure in patients of aotoiliac occlusive disease (AIOD). In recent years, minimally invasive endovascular techniques have become popular in cases of short segments stenosis. However, AFB grafting can also be performed as secondary procedures in failures of previous endovascular procedures.

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Aim:-
To study presentations and clinical outcomes in patients undergoing Aortofemoral bypass grafting.

MATERIALS & METHODS :-
During 18 months period, a hospital based prospective study is done in Grant Government Medical College & Sir JJ group of hospitals,Mumbai from 1st January 2023 to 30th June 2024 over 20 patients who underwent AFB. Mean age of all 20 patients was 56 years. Indications comprised of Occlusive disease with Intermittent claudication (IC) (n=10), Critical limb ischemia (CLI) (n=4), Resting pain (RP) (n=4) and Tissue loss (TL) (n=2).

Patients were referred to the department of CVTS outpatient clinic by primary care physicians or presented in emergency room with critical limb ischemia. 4 patients were referred from the department of Interventional Radiology in view of stent occlusion & further vascular bypass surgery. All patiemts were preoperatively evaluated. Informations like patient demographics, clinical symptoms, risk factors, comorbidities, blood investigations, radiological investigations (Chest X-Ray, 2D echo, Color Doppler, CT Angiography), prior vascular operative details were collected and recorded.

All patients were informed regarding the procedure i.e., Aortofemoral bypass grafting, its benefits, risks and complications, and consent was taken. Post operatively all patients were considered for colour doppler of bilateral lower limb to check graft patency. Follow up was done for 30 days post operatively.

RESULTS :-
Mean age of 20 patients was 56 years out of which 13 were males (65%) and 7 were females (35%).

Table 1. Patient demographics

Age group (years)	**No. of patients**	**Percentage %**
30-40	1	5%
40-50	2	10%
50-60	10	50%
60-70	5	25%
>70	2	10%

AFB was performed more frequently for Intermitten claudication (50%) than for the rest of other indications.

Table 2. Indications for AFB

Indications	**No. of patients**	**Percentage %**
Intermittent claudication (IC)	10	50%
Critical limb ischemia (CLI)	4	20%
Resting pain (RP)	4	20%
Tissue loss (TL)	2	10%

Among risk factors, hypertenson was he leading factor (85%) followed by Diabetes mellitus (70%) & smoking (65%). Predictors of morbidity included Chronic kidney disease (25%), Coronary artery disease (25%), COPD (20%) and Cerebrovascular accident (20%).

Table 3. Baseline patient risk factor

RF	**No. of patients**	**Percentage %**
Smoking	13	65%
Hypertension	17	85%
Hyperlipidemia	5	25%
Diabetes Mellitus	14	70%

Table 4. Baseline patient comorbidities

Predictors	**No. of patients**	**Percentage %**

CAD	4	20%
CKD	5	25%
COPD	4	20%
CVA	4	20%
CLD	1	5%
Malignancy	0	0%

4 patiens had past history of angioplasty with stent occlusion and was planned for AFB out of which 2 were planned for abdominal approach for AFB grafting via a ring Dacron graft ; and other 2 had a thoracic approach for Thoracic aorta bifemoral byass grafting via a Bifurcated Y Dacron graft.

All 20 patients were observed/ followed up for 30 days. 3 patients (15%) expired on post-operative second week due to septicemia. 2 patients (10%) underwent amputation due to gangrenous changes. Only 1 patient (5%) had surgical site infection which was managed by IV antibiotics & antiseptic dressing. 1 patient had graft occlusion who underwent emergency graft thrombectomy. Graft patency was found to be triphasic flow in 90% cases.

DISCUSSION :-

Over the years , many literatures have specified the durability of AFB grafting with long term patency and lower rate of graft complications. Middle aged men presented the most with features of intermittent claudication / critical limb ischaemia. Smoking, Hypertension and Diabetes remained the leading risk factors. According to level of occlusion in Aorta, the approach (thoracic/abdominal) was planned. Dacron grafts were used for all the interventions due to financial limitations. Post operatively all patients were prescribed Xantinol Nicotinate, Pentoxifylline , Cilostazole, low dose Aspirin and Statin.

STUDY LIMITATIONS :-

1) Study time was only 18 months, so long term complications wasn't taken for considerations.
2) Patients follow up was variable.

CONCLUSION :-

In era of endovascular intervention, Aortofemoral bypass grafting surgery is more likely to be performed for intermittent claudication and graft patency has a better outcome.

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