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Multidisciplinary Approach In Peripheral Arterial Occlusive Disease - Study From A Tertiary Care Hospital, Guntur.

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Abstract
***Introduction**: Peripheral arterial disease (PAD) is widespread, affecting approximately 12% of the adult population and up to 20% of patients older than 70 years. Patients with PAD may be asymptomatic, or they may have symptoms of intermittent claudication or symptoms of critical limb ischemia with rest pain, tissue loss, or gangrene*
***Material & Methods**: The present hospital based observational study was conducted in the Department of Cardiovascular and Thoracic Surgery, Government General Hospital, Guntur Medical College, Guntur. Study period was from November 2017 to March 2020. Doppler and CT angiogram were done in all the patients. All the patients managed by non-invasive and invasive techniques*
***Results**: Total number of patients with Peripheral arterial disease during the study period were 130. Out of whom, 121 were males and 9 females with mean age being 32 years. 101 patients had antiplatelet therapy initially and later for invasive techniques, 29 patients with hybrid approach.All patients managed with non-invasive antiplatelet therapy followed by invasive thromboembolectomy , revascularisation by open bypass with grafts (vascular(vein, artery), synthetic) and endovascular angioplasty or hybrid approach., All patients had revascularisation on discharge colour Doppler study. The mean number of days of hospital stay was 10.8±0.8 days with no hospital mortality*
***Conclusions**: Early diagnoses and management can prevent ischemia, gangrene, lethal complications Evidence suggests that men are more likely than women to develop an Peripheral arterial disease.*
***Keywords**: Peripheral arterial disease, Doppler study, Revascularisation, Graft*

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I. Introduction:

Peripheral arterial diseases are becoming more common as the population ages accounting for significant cardiovascular morbidity and mortality. Of the numerous clinical conditions, peripheral arterial diseases constitutes the most common of arterial occlusive diseases [1].

Existing literature says that the incidence of peripheral arterial disease is more common in elderly with most patients being 55-65 years age group with male preponderance. Risk factors include co morbidities such as hypertension, chronic obstructive pulmonary disease and smoking[1]. Patients with PAD may be asymptomatic, or they may have symptoms of intermittent claudication or symptoms of critical limb ischemia with rest pain, tissue loss, or gangrene.

Colour Doppler study is nearly 100% sensitive and specific in detecting peripheral arterial disease in patients who are asymptomatic and is the initial preferred diagnostic modality. Computerized tomography angiography (CTA) is also performed for evaluation of blood vessels[3, 4].

Noninvasive and invasive modalities remain the only treatment for PAD in recent days [4].

The objective of the study was to review the experience in the management of peripheral arterial occlusive disease in Government General Hospital, Guntur Medical College, Guntur.

II. Material And Methods:

The present hospital based observational study was conducted in the Department of Cardiovascular and Thoracic Surgery, Government General Hospital, Guntur Medical College, Guntur.

It was intended to review the experience in the management of peripheral arterial occlusive disease from the institute from November 2017 to March 2020.

An informed consent was taken from all the patients and proper counseling was given to them prior to the start of the study.

Initial clinical assessment was done along with routine investigations including complete hematologic and biochemical investigations. Respiratory evaluation was also done. Colour Doppler study and computerized tomography angiography (CTA) were done in all the patients. All the patients underwent Revascularisation with noninvasive and invasive modalities.

Non invasive management with anticoagulation therapy. Invasive management for acute occlusion with thromboembolectomy. chronic occlusion by angioplasty with stents(drug eluting stents and balloons) by modified seldinger technique in Catheterization laboratory.

Surgical procedure was done under general or thoracic epidural/spinal anesthesia, Bypass grafts with arterial, venous ,synthetic with PTFE(polytetrafloroethylene), Dacron grafts. Arteriotomy done and any thrombus is removed with fogarty catheter no.3,4,5 depending on target vessels diameter. A graft is anastomosed to either end of the affected section. A Proximal control– clamp and Distal control with clamp at the arteries was made. Then clamps were removed and blood flow is returned.

A predesigned proforma was used to get the relevant information. The basic demographic data, history of smoking. diabetes or hypertension, clinical data, type of occlusion, post-operative outcome, length of hospital stay and other required details were collected.

Statistical analysis was done by using Microsoft Excel 2010 and EPI INFO 7 version. Data was presented in percentages and proportions.

III. Results

Total number of patients during the study period diagnosed and treated for peripheral arterial occlusive disease were 130. The mean age was 32.6±5.08 years indicating an advanced age more commonly being affected. A slight male preponderance was observed with 121 males and 9 females.

With regards to co morbidities, all 129 cases were hypertensive patients and one patient had diabetes.

Other risk factors observed in the present study were smoking which was seen in 101 patients and Chronic Obstructive Pulmonary Disease (COPD) which was also present in 3 patients. None of the cases had any history of any stroke or any family history of peripheral arterial disease.

Table 1: Demographic and clinical characteristics

Characteristic	**Number**
Total no. of patients	130
Sex distribution Male Female	 121 9
Mean age (years)	32.6±5.08
Hypertension	129
Diabetes mellitus	01
Smoking	101
COPD	03

Table 2: Characteristics of peripheral arterial occlusive disease

Characteristic	Number	management
Type of occlusion Acute/chronic acute	 101 74	Anticoagulation thromboembolectomy
chronic	21	angioplasty
	9(synthetic-3,arterial-2,venous-4)	Bypass grafts

Surgical procedure was done under general or thoracic epidural/spinal anesthesia. Open surgery done in patients with acute occlusion for thromboembolectomy, Systemic heparinisation with 1mg/kg body weight 3 minutes after arteriotomy done and fogarty catheter placed and thrombus extracted, good antegrade and retrograde flow achieved, arteriotomy closed with 7-0 prolene sutures. postprocedure 25 to 50ml sodium bicarbonate intravenously to avoid metabolic acidosis. Bypassgrafting technique.for chronic occlusion. With autografts with arterial(radial), reversed great saphenous vein , allografts synthetic with PTFE, Dacron grafts. Arteriotomy done on diseased vessel, thrombus extracted with fogarty catheter. proximal and distal clamp. A graft is anastomosed to either end of the affected section with 7-0 prolene sutures. A graft flow intra or post operatively was patent in all 9 patients. Post operatively all patients had revascularization and graft patent for bypass graft patients on discharge colour Doppler study.

Outcome:

No post-operative complications were observed among the patients. With regards to hospital stay, the mean number of days of hospital stay was 10.8±0.8 days with no hospital mortality.

IV. Discussion

The incidence of peripheral arterial occlusive disease(PAD) has increased during the past few decades, due in part to the aging of the population, the rise in the number of smokers, the introduction of screening programs, and improved diagnostic tools[7].

Important risk factors for PAD are male gender, and smoking. A positive family history for PAD, especially first-degree male relative, is also associated with four times increased risk of PAD[8]. Additionally, history of intermittent claudication, rest pain, other vascular occlusions, coronary artery disease, cerebrovascular disease, atherosclerosis, hypercholesterolemia, and hypertension have been found to have association with PAD, although data for some of these factors are inconsistent[9,10].

The present hospital based observational study conducted in the Department of Cardiovascular and Thoracic Surgery, Government General Hospital, Guntur Medical College, Guntur which is a tertiary care centre with an objective of the study was to review the experience with in the management of peripheral arterial occlusive disease.

In the present study, middle age, male sex, smoking, hypertension were identified as important risk factors in peripheral arterial occlusive disease. Anticoagulation, angioplasty, thromboembolectomy and grafting surgery was done as per the type of occlusion with no post-operative complications and no mortality with all patients having revascularization and patent graft on discharge.

A prevalence and risk factors study on peripheral arterial occlusive disease by Michael H. Criqui K et al[11] observed that the mean arterial occlusion increased with smoking. The increase was more pronounced in men than in women. The age-related increase in the median diameter was less than that in the mean diameter. An peripheral arterial occlusion was present in 121 (8.9%) men and 9 (2.2%) women ($p < 0.001$). The prevalence of peripheral arterial disease increased with smoking. Persons who had smoked for more than 40 years had an odds ratio of 8.0 for peripheral arterial occlusive disease compared with never smokers. Low serum high density lipoprotein cholesterol was associated with an increased risk for peripheral arterial disease. Antihypertensive medication was significantly associated with peripheral arterial disease, but high systolic blood pressure was a risk factor in women only.

A fifteen year population based study of peripheral arterial occlusive disease by Rice TW, Lumsden AB et al[12] found that the mean age was comparatively same as present study with 32.5 years with male preponderance. 97.2% were males. 78% underwent anticoagulant therapy and 57% underwent thromboembolectomy, 16.15% underwent angioplasty,7% bypass graft, 23.07% hybrid approach by anticoagulation,angioplasty, thrmboembolectomy and bypass grafting. Best revasularisation achieved by hybrid

approach. There was a decreasing trend in the incidence of of peripheral arterial occlusive disease during the 15 year study period.

V. Conclusion

Evidence suggests that men are morelikely than women to develop an peripheral arterial disease. GOLDEN hour of early diagnosis, viability with Doppler study and early management will reduce the risk of critical limb ischemia, gangrene, lethal complications of amputation and surgical resections .

References

[1]. Criqui MH, Fronek A, Barrett-Conner E, et al. The prevalence of peripheral arterial disease in a defined population. *Circulation*. 1985;71(3):510-515.
[2]. Rice TW, Lumsden AB. Optimal medical management of peripheral arterial disease. *Vasc Endovascular Surg*. 2006;40(4):312-327.
[3]. Norgren L, Hiatt WR, Dormandy JA, et al. Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II). *J Vasc Surg*. 2007;45 (suppl S):S5-S67.
[4]. Dormandy JA, Rutherford RB. Management of peripheral arterial disease (PAD). TransAtlantic Inter-Society Consensus (TASC). *J Vasc Surg*. 2000;31(1 pt 2):S1-S296.
[5]. Ouriel K, Veith FJ, Sasahara AA. A comparison of recombinant urokinase with vascular surgery as initial treatment for acute arterial occlusion of the legs. Thrombolysis or peripheral arterial surgery (TOPAS) investigators. N Engl J Med 1998;338:1105-11.
[6]. Fagundes C, Fuchs FD, Fagundes A, Poerschke RA, Vacaro MZ. Prognostic factors for amputation or death in patients submitted to vascular surgery for acute limb ischemia. Vasc Health Risk Manag 2005;1:345-9.
[7]. Illuminati G, Bertagni A, Calio FG, Ciulli A, Guglielmi R, Vietri F, *et al*. Acute ischemia of the lower limbs. Riv Eur Sci Med Farmacol 1996;18:19-27.
[8]. Ender Topal A, Nesimi Eren M, Celik Y. Management of non-traumatic acute limb ischemia and predictors of outcome in 270 thrombembolectomy cases. Int Angiol 2011;30:172-80.
[9]. Beyersdorf F, Schlensak C. Controlled reperfusion after acute and persistent limb ischemia. Semin Vasc Surg 2009;22:52-7.
[10]. Henke PK. Contemporary management of acute limb ischemia: Factors associated with amputation and in-hospital mortality. Semin Vasc Surg 2009;22:34-40.
[11]. Güler A, Sahin MA, Karabacak K, Küçükaslan N, Yokusoglu M, Tatar H. Accompanying embolectomy and closed fasciotomy in the same session for the delayed arterial thromboembolic occlusions in lower extremity. Anadolu Kardiyol Derg 2009;9:407-10.
[12]. Iyem H, Eren MN. Should embolectomy be performed in late acute lower extremity arterial occlusions? Vasc Health Risk Manag 2009;5:621-6.

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