INTRODUCTION AND AIM OF THE WORK

Definition :

Coarctation of the aorta is a congenital narrowing of the lumen that produces an obstruction to blood flow. This narrowing can occur anywhere from the arch to the aortic bifurcation; however, 98% occur between the left subclavian artery proximally and the junction of the aorta and ductus arteriosus distally ***(Waldhausen, J.A. and Pae, W.E. 1986).***

This simple definition does not denote the complex nature of the lesion. This complexity is underscored by the following issues and controversies :

1. Variability in coarctation morphology.
2. Associated lesions.
3. The numerous reparative techniques available.
4. Differences between neonatal, infant, and older patients.
5. Use of prostaglandin E_1 in the preoperative management.
6. Uncertainty regarding the criteria used to assess the quality of surgical repair in both short-and long-term follow-up.
7. Poor understanding of the etiology and physiology of systemic hypertension after surgical repair ***(Castaneda, A.R., 1994)***.

Those issues and controversies will be discussed in this study. The aim of this work is also to study types, development, histopathological changes and incidence of coarctation of the aorta. Also to study the diagnostic modalities and role of surgery in management of coarctaion of the aorta.

Incidence:

Coarctation of the aorta is the eighth most common congenital heart defect, and comprises 5% to 8% of cases of congenital heart disease. The incidence of coarctation of the aorta is estimated at 1 per 1200 live births. Males are affected two to five times more commonly than females and it is observed less frequently in blacks ***(Mitchell, M. et al. 1990).***

Associated lesions:

Certain associated lesions will be considered, including patent ductus arteriosus, tubular hypoplasia of the isthmus or aortic arch, and more remote lesions that are not surgically addressed at the time of the coarctation repair (for example, bicuspid aortic valve, patent foramen ovale or atrial septal defect, and various types and sizes of ventricular septal defect).

Coarctation of the aorta is commonly associated with other complex congenital cardiovascular lesions. In some of these, the coarctation is addressed surgically as part of the repair of a more complex lesion (for example, hypoplastic left heart syndrome, the Taussig-Bing anomaly, complex transposition with tricuspid atresia, single ventricle with subaortic stenosis, and coarctation with certain types of large ventricular septal defect ***(Cataneda, A.R. 1994).***

Pseudocoarctation needs to be briefly mentioned. It is defined as a "buckling" or "kinking" of the aorta, which produces a radiographic picture similar to classical coarctation of the aorta. In contrast however there is little or no demonstrable obstruction present in pseudocoarctation.

Angiographically the aorta appears tortuous and kinked, and no pressure gradient is evident. This lesions is not however completely benign. There is a tendency for dilatation and aneurysm formation just below the area of buckling . Recommendation for surgical correction is made if dilatation of aneurysm is discovered (***Preloft J. K, 1978)***

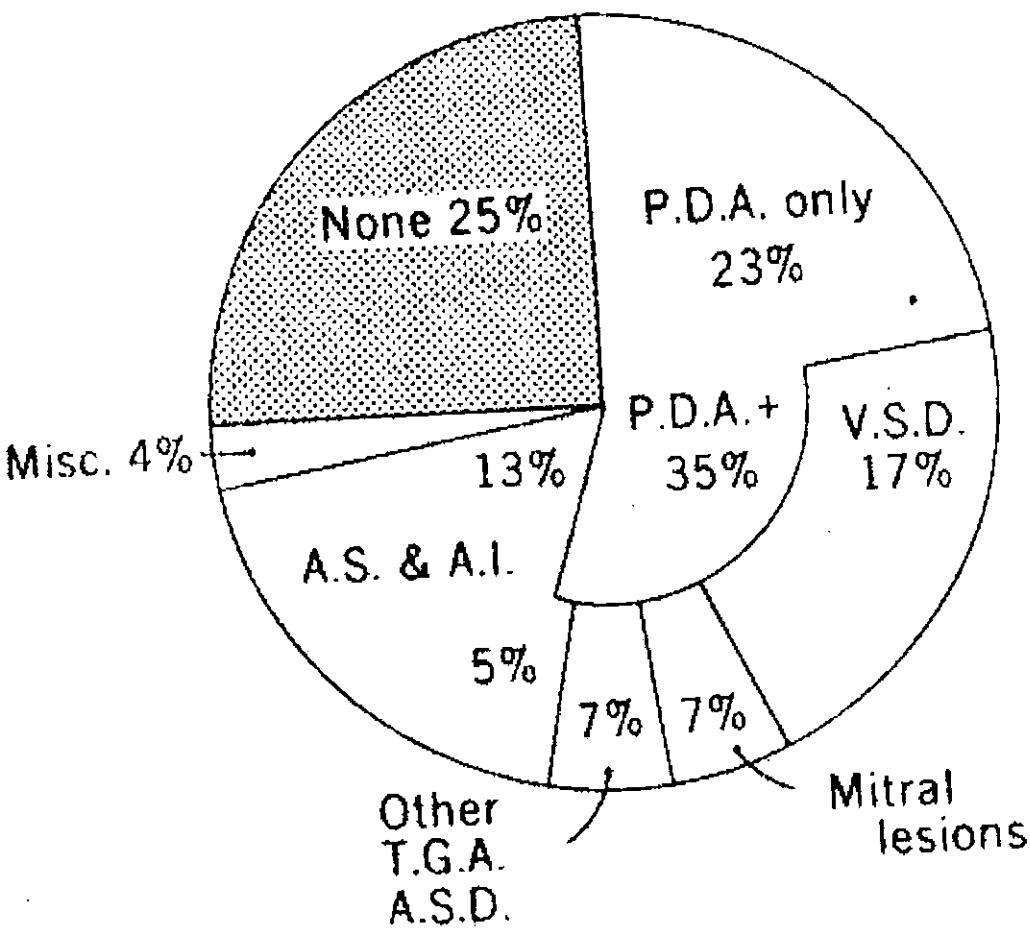

Fig. (1): Incidence of lesions associated with coarctation of the aorta. PDA = patent ductus arteriosus; VSD = ventricular septal defect; TGA = transposition of the great arteries; ASD = atrial septal defects; AS = aortic stenosis; AL = aortic insufficiency ***(Tawes RL, et al, Circulation, 1996).***