

CORONARY ATHEROSCLEROSIS IN NONCARDIAC DEATHS AT A TERTIARY CARE CENTER

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ABSTRACT

Introduction: Atherosclerosis leading to ischemic heart disease (IHD) is the most common cause of cardiac deaths worldwide. **Aim:** To evaluate the prevalence of atherosclerosis in subjects who died of noncardiac causes. **Methods:** This study was a retrospective study conducted at Department of Pathology, JLN medical college, Ajmer. The deceased patients who died of noncardiac causes and underwent autopsy at our hospital, their hearts were sent to our department for histopathological analysis. The hearts were fixed in 10% formalin, weighed, measured, and the coronary arteries were dissected out and carefully examined for any histological evidence of atherosclerotic plaques lesions. **Results:** out of 100 autopsy cases in which 65 were male and 35 were female, out of them 49 cases were (49.00%) subjects had evidence of atherosclerosis. In the study, 40 (81.63%) males and 9 (18.47%) females were atherosclerotic. **Conclusion:** The study showed alarmingly high prevalence of atherosclerosis. The pathogenesis of coronary atherosclerosis begins at a younger age in Indian population.

Key Words: Atherosclerosis, autopsy, coronary vessels,

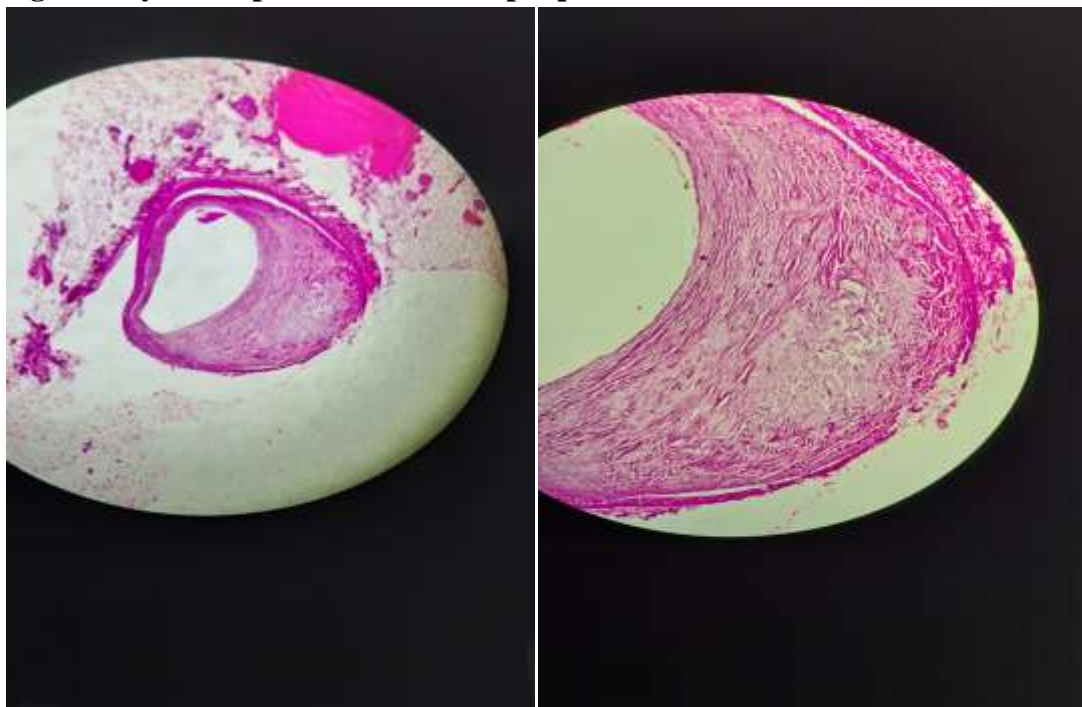
Introduction: Atherosclerosis leading to ischemic heart disease (IHD) is the most common cause of cardiac deaths worldwide. Coronary artery disease due to atherosclerosis has emerged as a major social epidemic in India.¹ It will soon emerge as the single largest disease accounting for nearly one-third of all deaths in India.

Atherosclerotic lesions start developing at an earlier age and are found to be in more advanced stages in Indian population as compared to the patients in western countries.² Atherosclerosis can lead to various complications like myocardial infarction (MI), stroke, embolization, ulceration, thrombosis, and aneurysm which cause considerable morbidity and mortality, thus affecting the lifespan and the quality of life of a large segment of population.

Aim: To evaluate the prevalence of atherosclerosis in subjects who died of noncardiac causes.

Methods: This retrospective study was conducted for a period of 3 months at Department of Pathology, JLN medical college, Ajmer. The deceased patients who died of noncardiac causes and underwent autopsy at our hospital, their hearts were sent to our department for histopathological analysis. All the data were taken from records. The hearts were fixed in 10% formalin, weighed, measured, and the coronary arteries were dissected out and carefully examined for any histological evidence of atherosclerotic plaques lesions. All collected data was put in to Microsoft excel sheet and analysis was done using Epi info software of CDC.

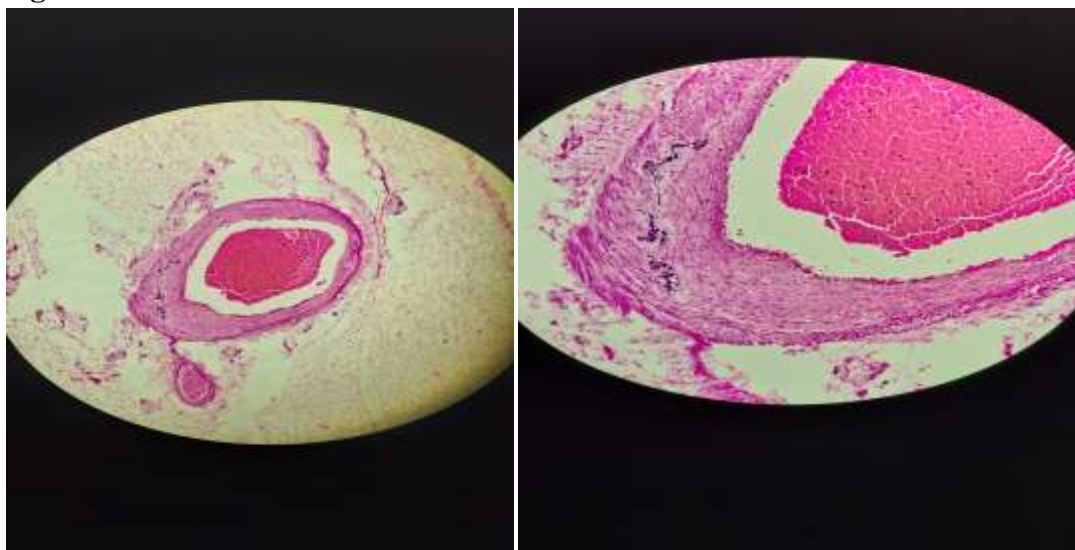
Fig.1. Fully developed atheromatous plaque



(a) 4 x view

(b) 10 x

Fig. 2 COMPLICATED ATHEROMA



(a) 4 x view

(b) 10 x

Results: out of 100 autopsy cases screened during 3 months after fulfilling inclusion and exclusion criteria, we found that 65 were male and 35 were female. out of total 100 cases 49(49.00%) had evidence of atherosclerosis. In the study, 40 (81.63%) males and 9 (14.47%) females were atherosclerotic.

Table 1. Distribution According Sex

Age	Male	Female
<20	2	2
20 – 40	25	10
41 – 60	30	11
61 – 80	8	12

Fig. 3 Prevalence of atherosclerosis as per sex

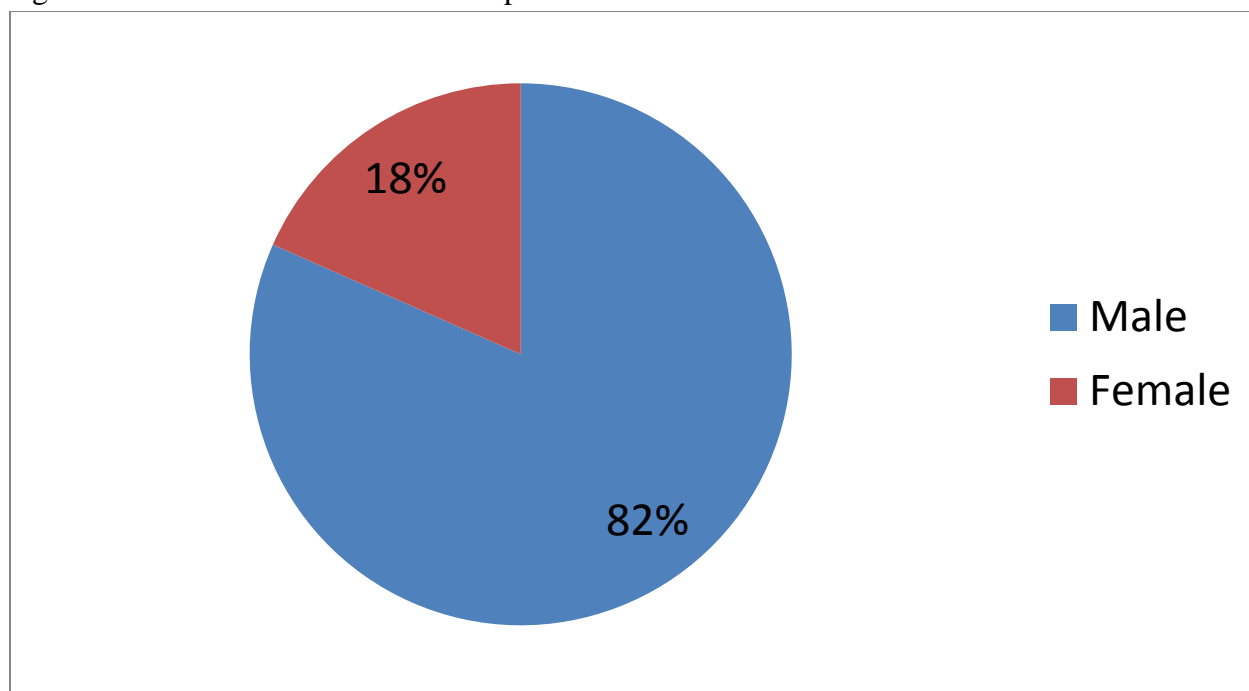
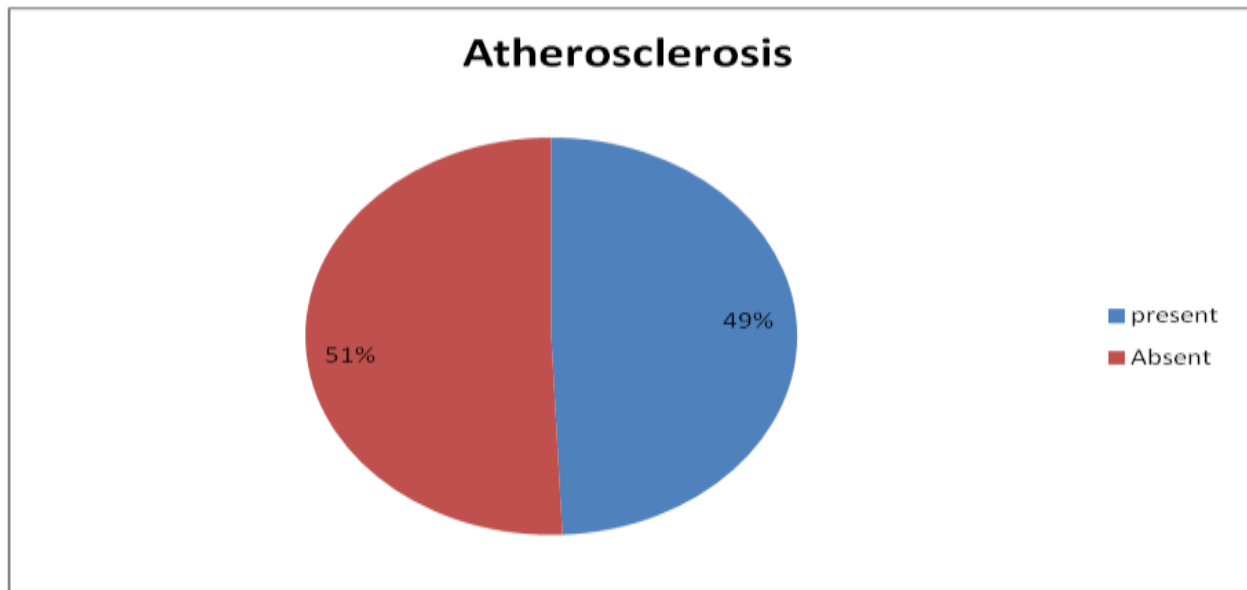


Fig. 4. Prevalance of atherosclerosis

**Discussion:**

Ischemic heart disease (IHD) due to coronary vascular disease is mainly caused due to atherosclerosis. The Indian population is otherwise also vulnerable to coronary vascular disease and the disease also has an earlier onset in our population. Morbidity and mortality due to coronary atherosclerosis in India has reached alarming proportions and these numbers are expected to maintain the upward trend in the next decade. Atherosclerosis is a commonly observed pathological finding in almost all ethnicities and societies worldwide, but with variable prevalence in different races. The onset of atherosclerosis starts early in life from childhood and gradually progresses through young adulthood to form the lesions that causes coronary heart disease later in life.

In the present study, the overall incidence of atherosclerosis was found to be 49.5%, which is higher than what has been found in earlier studies by Dhruva et al.,³ (23.3%); Golshahi et al.,⁴ (28.9%); Garg et al.,⁵ (46.4%); and Yazdi et al.,⁶ (40%).

In our study we found that there is a progressive steady increase in atherosclerosis of coronary vessels in individuals from the 3rd decade of life onwards. Our findings corroborates well with findings of earlier studies in India. Yazdi et al.,⁶ Wig et al.,⁷ and Singh et al.,⁸ found that significant atherosclerotic lesions start developing from 2nd decade of life and onwards.

Males have a relative preponderance of coronary heart disease as is evident from multitude of national and international studies conducted in the past. In the study conducted by Garg et al.,⁵ they found coronary atherosclerotic lesions in 81.63% males as compared to 18.47% females. Bhargava and Bhargava⁹ reported coronary atherosclerotic lesions were more prevalent in 74.8% males in comparison to 24.2% females in their study.

Conclusion:

The study showed alarmingly high prevalence of atherosclerosis. The pathogenesis of coronary atherosclerosis begins at a younger age in Indian population.

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