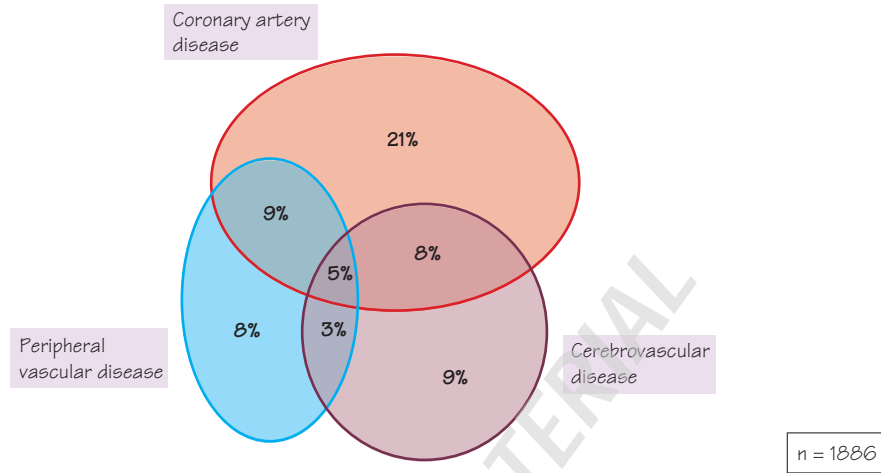
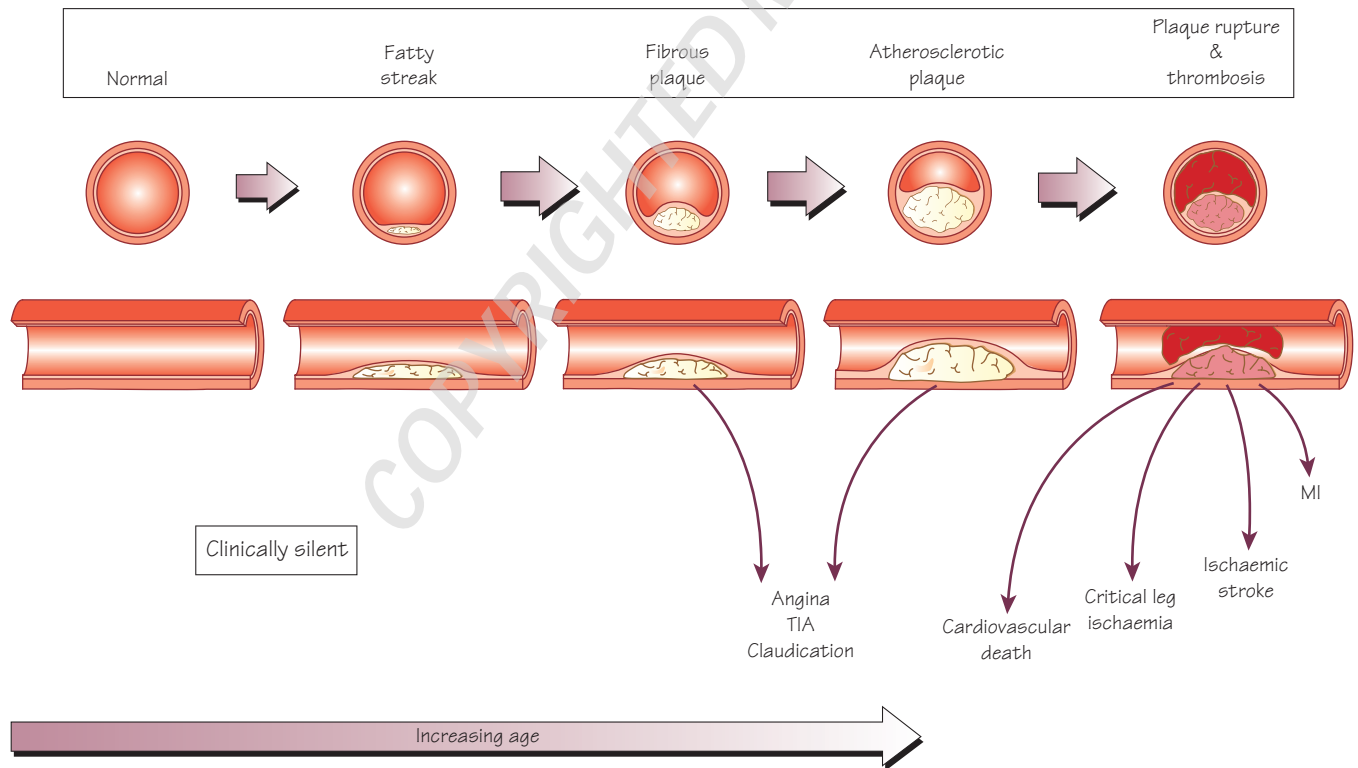


# 1 Overview of vascular disease

**Figure 1.1** Prevalence of the multi-system nature of vascular disease. (Source: Prevalence of coexistence of coronary artery disease, peripheral arterial disease and atherosclerotic brain infarction in men and women > or = 62 years of age. Aronow WS, Ahn C. *Am J Cardiol* 1994;74:64-5. Reproduced with permission from Elsevier).



**Figure 1.2** Diagrammatic representation of the age-related progression of atherosclerosis and its complications.



Abbreviations: MI, myocardial infarction; TIA, transient ischaemic attack

Vascular disease is a systemic disease typified by widespread atherosclerosis. The importance of this fact cannot be overemphasised both with regards to the multitude of medical conditions the vascular patient may present with in addition to the risks of intervention and surgical treatment in this patient group.

Being 'systemic', vascular disease affects a multitude of organs and tissues including the brain, heart, gut, kidneys and limbs. Therefore, the finding of atherosclerotic disease in one body region should prompt the examining physician to seek disease elsewhere in other high-risk vascular tissue (see Figure 1.1).

It is well documented that peripheral vascular disease is an independent marker for both coronary artery and cerebral vascular disease as well as an independent risk factor for an event in these tissues. In addition, vascular disease accounts for two out of the top five causes of death in the Western world (coronary artery disease and stroke). Furthermore, conditions afflicting the vascular patient account for an enormous number of lost disability-adjusted and quality-adjusted life years; including stroke, diabetes, obesity and chronic renal failure.

Because vascular disease is an age-related degenerative process developing over many years, by the time one tissue bed develops a complication often others do too, especially at times of great physiological stress such as illness or surgery. Certainly, the biggest complication among vascular patients, especially those undergoing intervention and surgery, is an acute myocardial infarction (MI). Figure 1.2 schematically demonstrates the age-related changes and advancement of atherosclerosis in the vascular patient, who will finally succumb to a 'plaque complication' with acute thrombosis and vessel occlusion.

However, there have been huge advancements in the care of the vascular patient over the past 25 years, not only in improved understanding and quality of medical management (especially antiplatelet agents and statins) but also in blood pressure control and long-term management of diabetes and chronic renal failure.

Endovascular treatment of vascular lesions including occlusions and aneurysms has also caused a shift in the demographics of patients being treated for disease who were once deemed too unwell or too

risky for treatment. Many devices continue to be developed or improved at an alarming rate to the point that there is no absolute upper age limit for treatment. The vascular surgeon, in addition to the medical and surgical treatment of vascular disease, remains central to the multidisciplinary team that tends to our aging atherosclerotic population on a daily basis and includes staff from general surgery, cardiology, respiratory medicine, renal medicine, endocrinology and diabetology, ophthalmology, podiatry, stroke medicine, rheumatology, nutrition, physiotherapy, occupational therapy, speech and language, anaesthetics, intensive care, orthopaedics and prosthetics, rehabilitation and social work.

Furthermore, the vascular surgeon, not only being an endovascular specialist, is the only true 'open' surgeon who operates with any regularity in all body regions including abdomen–pelvis, thorax, neck, upper and lower limbs. This, combined with our expertise in dealing with massive haemorrhage and its consequences, has placed us at the fore of modern approaches to acute care surgery, and in particular trauma surgery, with numerous surgeons now practising in both fields.

Vascular surgery is held to a very high level of governance with more high-quality evidence-based practice than most other specialties (second only perhaps to cardiology). There are clear international best practice guidelines for best medical therapies, stroke risk management and aneurysm selection in addition to very strong and robust international trials contributing to the smorgasbord of evidence-based practice.

Vascular surgery is entering a new era in that it is now recognised as an independent specialty in the UK with its own recruitment and training system as well as fellowship exam. This brings it into line with other countries such as the USA, Canada, Australia and continental Europe for accreditation. This superspecialisation of the service, in addition to the endovascular requirements, will see the specialty concentrated into larger centres such as academic medical centres and major trauma centres, with the vascular specialist remaining central to any future developments for hospital network services.