We will be publishing soon guidance on how to write a good obituary, but the essence of what we want is that the obituary should be well written and contain light and shade. We have encouraged self written obituaries and accepted those written by family members, but the best assessments are probably not self written and usually come from outside the family. Sidney Lee, a distinguished editor of the *Dictionary of National Biography*, warned against hero worship and family, official, and ethical bias. The best obituaries portray people as they really were and as they would have wished to be remembered.

That is what makes an obituary section compulsive reading.

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Synovium: what's new?

Better understanding of how it is affected by disease

Until recently, the understanding of normal synovium was based solely on microanatomical studies and ideas about function based on classic observations on synovial fluid—but few experiments. We can now discuss the biology of the tissue in terms of the ontogeny of cells, morphogenesis, cell metabolism, the expression of cell surface ligands, matrix composition, and vascular and fluid physiology.¹ A recurring theme is the interaction between cells and their matrix through adhesion systems that seem to modulate both cell behaviour and fluid flux. Having begun to understand how the tissue works, we can now construct models of how it becomes diseased.

Synovium carries a specialised surface layer of intimal cells,² which comprise both mature macrophages and modified fibroblasts. Recent studies indicate that intimal fibroblasts show specialisation even before the formation of joint spaces in the embryo. Mature intimal fibroblasts show high activity of uridine diphosphoglucose dehydrogenase, an enzyme that plays a part in the synthesis of hyaluronan. They express several cell surface ligands at high concentrations and are surrounded by specialised matrix containing fibronectin, laminin, and minor collagens.³ Beneath the intima lie fenestrated capillaries.⁴

Many of these factors seem to have a role in fluid flux between tissue and joint spaces. Simkin⁵ and Levick⁶ have painstakingly unravelled this process in terms of the supply of ultrafiltrate from plasma, pathways of diffusion through the tissue, and flux across the tissue surface. Levick has recently devised a model in which hyaluronan regulates the volume of synovial fluid by preferentially inhibiting rapid outflow, as opposed to inflow, of fluid from the joint space. This allows the volume of synovial fluid to be maintained during exercise, when muscle activity tends to pump interstitial fluid into the lymphatics.

Vascular cell adhesion molecule-1 and complement decay accelerating factor are both present at very high concentrations on synovial fibroblasts; comparable coexpression on fibroblastic cells is seen only on the follicular dendritic cells in germinal centres of lymphoid tissue. Within germinal centres vascular cell adhesion molecule-1 is essential for proliferation of B cells.⁶ Complement decay accelerating factor is probably essential for protecting cells from killing mediated by complement in an environment rich in immune complexes.⁷

Rheumatoid arthritis has been described as a disease of lymphoid metaplasia in synovium. The explanation for this may be that intimal fibroblasts in the synovium provide stromal cell cofactors crucial for the proliferation of B cells in an environment lacking the control provided by a full

complement of T cells, which are present in normal synovium only in small numbers.⁸ The other stromal cell ligands required for proliferation of B cells are complement receptors, which are needed for the presentation of antigens.⁹ These are present on intimal macrophages in the synovium. Intimal macrophages are intimately associated with the fibroblasts, thereby providing an apparently almost perfect environment for the proliferation of B cells.

If the hypothesis is correct then the question is why everyone does not have rheumatoid arthritis rather than why some people do. The answer may relate to several factors, including levels of B and T lymphocyte migration and the presence in synovium of factors inhibiting cell interaction, such as hyaluronan.¹⁰

This theoretical model¹¹ may improve our understanding of other syndromes. Vascular cell adhesion molecule-1 is expressed on myoblasts in growing and regenerating muscle, which may be relevant to juvenile dermatomyositis. Complement has long been implicated in systemic lupus erythematosus, but the dangers of variations in the control of the complement system may now become clearer. Maybe the jigsaw is finally beginning to fit together.

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Correction

Do we need an Ofhealth?

Owing to an editorial error the name of the author of this editorial was spelt incorrectly (24 June, pp 1618-9). The author is Carol Propper (not Popper).