

# From the Library

"The description of the bandaged eyes of the images left a strong enough impression on their imaginations, though in a quite different way. The first blind man and his wife, for example, were rather uneasy, for them it was mainly an unpardonable lack of respect. The fact that all human beings were blind was a calamity for which they were not responsible, these are misfortunes nobody can avoid, and for that reason alone covering the eyes of the holy images struck them as an unpardonable offense and if the parish priest had done it even worse. The reaction of the old man with the black eye patch was quite different, I can imagine the shock he must have had, I imagine a museum in which all the sculptures had their eyes covered, not because the sculptor did not want to carve the stone until he reached the eyes, but covered, as you say, with bandages, as if a single blindness were not enough, it's strange that a past like mine does not create the same effect, sometimes it even gives people a romantic air, and he laughed at what he had said and at himself. As to the girl with the dark glasses, she said that she only hoped she would not have to see this cursed gallery in her dreams, she had enough nightmares already. (Saramago Jose. *Blindness*. New York: Harcourt Brace, 1997:287)

The human genome appears to be full of up to 20 000 pseudo genes, that is to say DNA sequences that appear to be truncated or even error riddled copies of functional genes. Although these genes are often dismissed as junk DNA recent research from Japan suggests that they may be essential for normal functioning. In an experiment in mice insertion of a pseudo gene for makorin 1, a gene thought to be associated with bone and kidney development, resulted in the death of the mice within days of birth. When the intact copy of the pseudo gene was inserted into the mouse embryos all of the embryos developed normally. Investigators suggest that pseudo genes may function as a decoy to lure away destructive enzymes or regulatory proteins that would otherwise suppress the activity of the makorin 1 gene. (*Discovery* 2003;24:16)

Researchers have now identified what are being called cancer stem cells in blood cancer such as leukaemia and breast and brain cancer. These findings raise the possibility that these mutations that lead to cancer development may have origi-

nated in the body's small supply of naturally occurring stem cells. Moreover, new work shows that cancer stem cells which form only a small proportion of the total tumour cell population are the only tumour cells with the capacity to keep tumours growing. This would lead to the natural conclusion that to cure some cancers completely it may be necessary to design therapies that target cancer stem cells without wiping out the stem cells needed to maintain tissues such as bone marrow and intestinal lining. In addition, if stem cells are indeed the source of some cancers, the use of stem cells for organ repair may have to be reconsidered. (*Science* 2003;301:1308-10)

Tumours appear to influence surrounding host stroma by inducing angiogenesis in order to provide their oxygen and nutrient needs. Vascular endothelial growth factor A (VEGF-A) is an important mediator of angiogenesis in normal and neoplastic tissues. Total VEGF-A has been associated with melanoma progression. Investigators from the Cancer Institute of New Jersey have now demonstrated in melanomas that during the vertical growth phase VEGF-A in all its isoforms is produced with more vigour that when the tumours are in horizontal growth phase. Moreover, nodal metastases produce the highest levels of VEGF-121 and VEGF-165 but not VEGF-189. These data suggest that soluble forms of VEGF-A may be an important factor in melanoma metastases in regional lymph nodes. (*Journal of the American College of Surgeons* 2003;197:408-17)

Over the past two decades enthusiasm for developing retinal pigment epithelial transplantation has gone through several phases of excitement and depression. Since it is now clear from genotyping studies that most retinal degenerations demonstrate gene defect expressed in photoreceptors the likelihood that pigment epithelial transplantation alone will be sufficient to rehabilitate these patients seems unlikely. However, interest still is maintained in retinal epithelial transplantation as a possible therapy for age related macular degeneration. In a new study from Louisville, Kentucky investigators have demonstrated that systemic immune suppression increased the 4 week survival of porcine retinal pigment epithelial xenografts in the albino rabbit subretinal space. However, poor survival was docu-

mented in immunosuppressed and competent animals 12 weeks after surgery. Moreover, many of the pigment containing cells 4 or more weeks after surgery appeared to be of host origin. (*Investigative Ophthalmology and Visual Science* 2003;44:4044-53)

Cataract surgery techniques continue to evolve. Controversy surrounding the question of whether or not the move to clear corneal wounds has led to an increase of endophthalmitis. In a retrospective comparative case controlled study from Washington University School of Medicine in St Louis, the use of a clear corneal incision significantly increased the risk of endophthalmitis compared to scleral tunnel incisions. Of note was the fact that the presence or absence of a suture did not seem to affect the incidence of endophthalmitis. (*American Journal of Ophthalmology* 2003;136:300-5)

There is widespread acceptance of cardiac surgical procedures even for the elderly. As recently as two decades ago the performance of cardiac surgery on patients more than 70 years of age was noteworthy. In a study, coordinated at the University of Pennsylvania, of cardiac surgery on non-agenarians and centenarians operative mortality and complication rates for this age group undergoing cardiac surgical procedures was clearly the highest. However, the authors suggest that with careful patient selection the majority of these patients have a lower risk of CABG mortality approaching that of younger patients. Nevertheless, the mortality rate for this group of patients was over 7%. (*Journal of the American College of Surgeons* 2003;187:347-57)

A recent study of milk produced by mothers of extremely preterm babies found that it contained significantly higher concentrations of transforming growth factor  $\alpha$  and epidermal growth factor—both of which promote healing of gastrointestinal mucosa—than milk from mothers of preterm and full term babies. This is one more bit of evidence that nutritional demands of extremely premature babies are complex and that current parenteral nutrition devoid of peptide growth factors may have serious adverse health consequences on these premature infants. (*Pediatric Research* 2003;54:15-19)