The Thrill of the Senses

We often take our gifts for granted, not appreciating them until they're gone. I empathise with an old pug we recently purchased who has one (dim) eye, very poor hearing, and perhaps eighteen months of life to go – these facts don't seem to slow her down!

Today, I'll walk through a few of the ways that immune diseases can impact upon the senses.

SIGHT

Vision can be impacted by the passage of time, with problems such as cataracts (clouding of the lens) and age-related macular degeneration (ARMD - damage of the macula part of the light-sensing area at the back of the eye, the retina) – interestingly, ARMD displays some aspects of immune causation, with an immune protein called "complement" playing a role in many individuals. For those of you on steroids, problems with cataracts must be monitored for, along with checking inner eye pressures (intra-ocular pressures) – minimisation of these risks involves finding the lowest possible dose of prednisolone that can be achieved. With Plaquenil (hydroxychloroquine) therapy, annual eye checks are required for a very rare side-effect of pigmentation in the retina, a process that can be arrested/reversed in its early stages (with drug cessation) in the one in a million people in whom it develops. Ways in which the immune system can affect the eyes more directly include various forms of uveitis, labelled as anterior (iris), intermediate (vitreous chamber), and posterior (retina), depending upon which part of the eye is inflamed. These processes often present with red, sore eye +/- photophobia, although more posterior inflammation can also affect vision. These processes are managed with immune suppression, either by local drops, or by oral therapy (including steroids).

SMELL & TASTE

These senses are often underestimated in their importance, and defects in these realms are under-reported and under-diagnosed. Smell and taste are intimately connected, and individuals with allergic or infective sinusitis often describe loss of taste along with loss of smell. Taste may be a critical feature in minimising the ingestion of toxins, and people with impaired taste are less able to discern the bitter or altered taste that provides the body's first clue to a tainted or harmful food product. Many medications can induce alterations of taste (dysgeusia), which is often described as a foul, rancid, salty or metallic taste in the mouth. Taste alterations are common in Sjogren's due to the lack of saliva that contributes to the taste experience, and reflux, if poorly controlled, can also create unpleasant taste sensations. Other known causes of taste disturbance include nutrient deficiency (e.g. zinc), and various medications (e.g. immune suppressive agents, metronidazole ("Flagyl") and some anti-hypertensives (e.g. amlodipine).

SOUND

Involvement of the ears, nose and throat by immune processes is common. Perhaps most noteworthy is the Eustachian tube dysfunction that can cause hearing reduction, ear pressure, and disequilibrium in the setting of upper airway inflammation (e.g. allergic rhinosinusitis, or "hay fever"). This process is usually triggered by inhaled allergens such as dust mite and grasses (plus animal danders and moulds), although the upper (and lower) respiratory tract can also become involved in various forms of vasculitis (vessel inflammation) such as Wegener's (granulomatous polyangiitis), resulting in sinusitis, hearing problems, and occasionally nasal and septal erosions (as well as lung and kidney inflammation). As with all such aggressive processes, first-line therapy with steroids is required here, followed by "second-line" agents to secure ongoing inflammatory control whilst allowing steroid weaning to occur.

TOUCH

Aside from robbing us of many pleasant sensory experiences, bodily injury and damage can occur if sensory inputs are reduced. Touch and pain receptors provide critical protection in signalling the need to remove a

threatened limb or body part from a source of danger. These vital sensory inputs can be impaired by various types of nerve injury, called neuropathy, which may involve motor pathways (affecting power), sensory pathways (affecting perception of pain, temperature, vibration and position), or both. Neuropathy may be a feature of diabetes, a process that can sometimes be induced by excessive and prolonged steroid therapy, in which case all efforts should be made to try and minimise the steroid dosage and up-titrate second-line agents. Neuropathy can also be induced by various autoimmune problems, including lupus and inflammatory demyelination (as seen in "Guillain-Barre" syndrome); medications (e.g. chemotherapy agents); alcohol excess; nutrient deficiencies (e.g. vitamins B1, B6 and B12); and bone-marrow problems (e.g. myeloma). Any impairment of motor or sensory function that persists and interferes with everyday function should be investigated through assessment of these reversible factors, followed by more specialised studies if symptoms remain unexplained.

Like our pug, some of us must deal with the world with just a few colours removed. For the rest of us, we cannot help but feel gratitude for the wonders of our five senses, and, if my sixth sense is working properly, I trust you will have a good year ahead.

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