THE MYSTERY OF PAIN

When I talk to groups of people with chronic pain, I ask them to define 'pain',as if they were explaining it to an alien who comes from a planet where there is no pain. Although initially people struggle, after a while a number of words emerge, 4 in particular

- Signal
- Unpleasant
- Feeling
- Damage

In fact the august body, The International Association for the Study of Pain, defines pain as:

An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

So the groups come up with the basics. It is important to notice 2 things about the IASP definition:

1. feeling is split into *sensory* and *emotional*: there is a physical and a psychological aspect to pain
2. damage can be *actual* or *potential*: more on that later.

In common with experts such as Lorimer Moseley, who has written some excellant very readable books about pain ("Explain Pain" and "Painful Yarns" I would particularly recommend. I am not on conmmission, incidently!), I believe that pain is more accurately described as a DANGER!!! signal rather than a damage signal.

Pain is in fact, a highly necessary survival mechanism. There are a few unfortunate individuals born without the ability to feel pain: they sadly lead very short and difficult lives.

"Pain is meant to wake us up." Jim Morrison (The Doors)

There is, however a rather strange conumdrum about pain. Some people don't feel pain when they suffer a dramatic, potentially fatal injury. Surviviors of shark attacks, for instance, or soldiers in battle. We can't say why exactly, but about a third of people in these situations feel no pain from the injury for several hours.

Perhaps this is because the brain perceives the injury as fatal and therefore the survival mechanism of pain is redundant: death is inevitable.

Despite chronic pain being of no valid use (it's effectively a redundant signal, an echo of the danger signal) we still can't get rid of it.....

It carries on telling us ***Slow down or Die***

So we are constantly bombarded with a signal that tells our brain that we are in danger. We don't have any conscious control over this. If we try to damp the signal down, the nervous system finds ways to 'up the ante' to make the vital signal heard.

My own personal opinion is that we aren't designed to cope with chronic pain. Back in the Neanderthal days, if you got injured, you died. So there was no such thing as chronic pain. Maybe our nervous systems simply aren't designed to cope with ongoing pain.

Which brings us to an idea I heard from a Swedish expert on pain:

When pain was unavoidable, it was bearable, but when it seemed avoidable, it became intolerable." (Joanne Dahl)

Wouldn't you think, in the 21st Century, that we could banish pain? Surely there must be an effective treatment? Sadly, as anyone with chronic pain will tell you, that simply isn't the case.

Doctors aren't very good at being straight with patients about not being able to treat chronic pain effectively. Often anaesthetists (most pain docs) try a range of interventions, some of them with significant risk, rather than face the fact that they cannot really take the patient's pain away.

Patients themselves, because they think it **MUST** be possible to get rid of pain in the 21st century, what with all science's progress, keep coming back because they think the pain is avoidable. It is only when someone straightforwardly acknowledges that pain is inevitable, that they can start to learn to cope with it....after all, why accept something you can change? But the saying goes:

What cannot be changed, must be endured."

So what is this pain we are going to have to put up with?

Well for one thing, it often becomes a condition in its own right reardless of what triggered it in the first place. I see patients with all types of chronic pain from a wide variety of causes: and they tend to have a number of symptoms in common.

I term these a ***Chronic Pain Syndrome:*** the word syndrome implying that more than one body system is affected.

The best way to understand these symptoms is to recognise that the danger signal that pain represents is designed to cause a number of effects: these are ***instinctive, unconscious mechanisms effects,*** mostly on the autonomic nervous system which drives unconscious body mecahnisms such as blood pressure, sweating etc.

Essentially the autonomic system has 2 modes:

1. SYMPATHETIC: **'fight, flight or fright'** e.g. how you'd respond to danger such as being chased by a sabretooth tiger.

2. PARASYMPATHETIC: restoring the status quo once danger has passed (you've got back to your cave safe and sound)

If you think about how you'd feel in an emergency and how the body responds to equip you to deal with it.

You'd have an adrenaline surge, your heart is likely to race, your breathing get fast and shallow. You may well sweat a lot. You may not be aware of it, but your gut will slow down or sometimes it may speed up a lot and give you diarrhoea, and you might feel the need to empty your bladder.

Being in chronic pain is rather like being in constant 'red alert' with the sympathetic nervous system in overdrive and an imbalance between that and the parasympathetic system.

The second feature of pain to remember is that, contrary to what we used to believe, the nervous system is highly changeable (we use the term 'plastic'), which means that quite quickly there may be changes in the signal, often at a spinal level, with crossover of signals, so that messages that should read 'light touch' become pain, for example.

So some of the problems in chronic pain are getting pain from stimulus that shouldn't really cause pain: like light touch, change in temperature. You can also, believe it or not, get pain in numb areas, which seems bizarre. You might also get odd sensation like insect bites or electric shocks.

Pain of all kinds, such as period pain, headaches etc: become much more painful when you

have chronic pain. Trapped wind is painful rather than uncomfortable. You might find you are not aware of needing to empty your bladder until the last minute and then having pain when you go.

People with all types of chronic pain may become highly sensitive to their environment, both physical (temperature, light, noise) and emotional (stress) and find quite minor changes can provoke marked physical response. This is because the nervous system as a whole has become hypersensitive . This is NOT a conscious process, I must stress, but some doctors will interpret it as the patient exaggerating their symptoms or being depressed.

Now it is pretty much inevitable that someone with constant, unremitting pain is going to be down in the dumps, perhaps clinically depressed.

We must also remember that the 'danger' signal of pain is by design aversive, that is to say, it is designed to provoke a response and it also by nature unpleasant: it is no accident that pain pathways run through the limbic system in the brain, the part dealing with emotions.

So anxiety (fear) and depression (despair) are part and parcel of pain. What is more, the chemical messengers that carry pain also carry mood which is why we give antidepressants to help treat pain (not usually at a dose high enough to treat depression).

Chronic pain is also a chronic stressor so has the same emotional effects as stress does.

"Pain is such an uncomforable feeling that even a tiny amount of it is enough to ruin every enjoyment". Will Rogers (American entertainer, famous for his pithy and homespun humour. 1879-1935)

STRESS RESPONSE SYSTEM

(awaiting picture insert)

The stress hormones, cortisol and adrenaline, have effects on all sorts of aspects of metabolism and in particular, blood sugar; cortisol raises blood sugar, which causes a response with insulin which lowers the blood sugar. Hence chronic pain patients are often susceptible to changes in blood sugar and have a 'boom and bust' cycle of fluctuating blood sugar.

Often they crave sugary foods, especially when the blood sugar is low, and other symptoms of low blood sugar include increased pain, anxiety, agitation, shakiness, feeling faint, sweating, headaches etc. Overnight drop in blood sugar can cause headaches on waking and having sopping bed clothes.

BLOOD GLUSCOSE REACTION

(awaiting graph insert)

The red graph indicates what happens to the blood glucose level of a diabetic after eating a high GI product. The orange and green graphs show the preferred blood glucose reaction after eating. The purple graph indicates what happens to the blood glucose level of a person suffering from hypoglycaemia after eating a high sugar food. (Source: tried not safe)

PAIN = DAMAGE?

This is the message we think pain is telling us. However, this is often not the case with chronic pain which in fact has no useful purpose. It might help to explain this if you think about Phantom Limb Pain. In fact, you can have phantom of any body part and it seems to happen because a map of the body part is hard-wired into the brain, so the absent part is felt as clearly as before it was removed. If there was pain before it was removed, the exact same pain persists. This is why amputation is not a successful way of treating pain. Similarly,cutting nerves doesn't work because the nerve grows back, usually sprouting from the side, which causes pain itself, often worse than before. So we can only use this technique successfully in people whose lifespan is short, i.e. they are terminally ill.

It is vital to recognise that pain doesn't necessarily mean damage. Disuse can itself cause pain

and then starting to re-use muscles etc., is likely to be uncomfortable but doesn't mean we shouldn't do it.

So - in conclusion:

Chronic pain is sadly something modern medicine cannot banish. It is highly complex and we are learning about it in much the same way as we learn about outer space. It brings to mind the joke about Sherlock Holmes and Watson, out camping.

Sherlock Holmes and Dr Watson went on a camping trip. After a good meal and a bottle of red, they lay down for the night and went to sleep.

Some hours later Holmes woke up, nudged his faithful friend and said "Watson, I want you to look up at the sky and tell me what you see" Watson said, "I see millions and millions of stars." Sherlock said, "And what does that tell you?"

After a minute or so of pondering Watson said, "Astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I observe that Saturn is in Leo. Horologically, I deduce that the time is approximately a quarter past three in the morning. Theologically, I can see that God is all powerful and that we are small and significant. Metereologically, I suspect that we will have a beautiful day today.

What does it tell you?

Holmes was silent for about 30 seconds and said, "Watson, you idiot! Someone has stolen our tent!"

The point is: we can talk all night about the complexities of chronic pain, use lots of fancy medical jargon, but the essence is simple: pain is a danger signal, a necessary survival mechanism that we are unable, at present, to successfully damp down more than temporarily.

BUT... it doesn't necessarily mean further ongoing tissue damage.

Finally, from a personal perspective, I like the following quote:

"*Given the choice between the experience of pain and nothing, I would choose pain".*

William Faulkner (American short story writer and Novelist. (Nobel Prize for Literature in 1949, 1897-1962)

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