Star health

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Stem cell transplant: An attempt to cure the incurable

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Previously incurable or possibly fatal blood disorders such as multiple myeloma, chronic lymphatic leukaemia and Thalassaemia Major cannot be cured totally using the conventional therapy like chemotherapy and radiotherapy. However, in recent years, there have been dramatic breakthroughs in the field of hematology and stem cell transplant that offer new therapies help patients live longer and lead better quality lives.

With allogeneic stem cell transplant, cure rates for some of these previously "incurable" disorders are as high as 90 per cent. Besides increasing survival rates, the quality of life is also enhanced. Stem cell transplantation allows for much higher doses of chemotherapy than usual to achieve significantly higher cure rates.

What is allogeneic stem cell transplant?

Allogeneic stem cell transplants refer to stem cells that are taken from one person and given to another. With these transplants, the donor's cells must match the recipient's tissue type (much like a blood transfusion needing to match the blood type of the person receiving it). In many cases, the stem cell donor is related to the recipient, typically a brother or sister. However, stem cells from unrelated donors can be used if the tissue types matches.

Applications of stem cell transplant

There are several applications of stem cell transplant like --

λ Replacement therapy as applied to severe aplastic anaemia (marrow failure), and congenital immunodeficiency disorders.

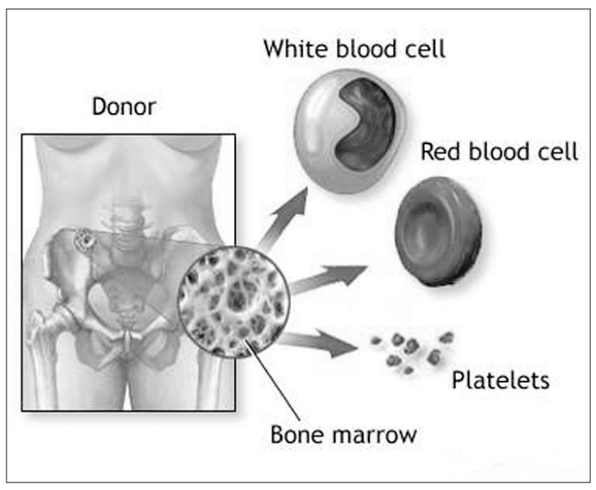
λ Gene therapy for Thalassaemia Major and Sickle cell anaemia.

λ Cell and immunotherapy for the treatment of leukaemias, other hematological malignancies and malignant solid tumorurs.

λ Stem cell rescue therapy, used mainly for certain tumours like lymphomas and myelomas.

λ Tolerance induction when stem cell transplant is used to allow development of organ like kidney, heart or liver.

λ Restoration of deranged immune system as in auto-immune disorders.



Where the facilities available?

There are several centres for stem cell transplant across the United States of America and Europe. In south east Asia, Singapore holds a leading position in the field of various applications of stem cell transplant.

The Stem Cell Transplant Centre at Mount Elizabeth Hospital provides a full range of facilities and services to diagnose and treat blood disorders and blood cancers. Besides providing fairly well-established treatments for haematological disorders, including various types of anaemias, marrow aplasias, coagulation disorders, acute and chronic leukaemias, myelomas, lymphomas and lympho-proliferative disorders, the Centre provides cutting-edge treatments using new applications of stem cell transplant for other life-threatening cancers. These include ailments such as advanced pancreatic cancers, renal cell cancers, metastatic colon cancers, ovarian cancers; and blood disorders such as Thalassaemia Major and Sickle cell anaemia.

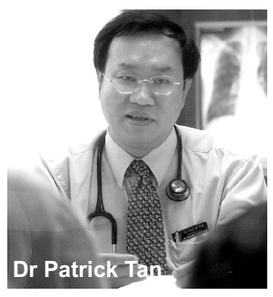
Centre Director Dr Patrick Tan, a world-renowned specialist in the field of oncology and its treatment, spearheads the Centre.

INTERVIEW

Exploring the possibilities of stem cell transplant

Dr Patrick Tan is the Medical Director of Stem Cell Transplant Centre of Mount Elizabeth Hospital in Singapore. He has more than 20 years experience in hematology and stem cell transplant, and has performed more than 650 cases of stem cell transplants.

In his career as a world-renowned specialist, he has achieved numerous significant medical milestones and pioneered revolutionary procedures. Recently he expressed his views to The Daily Star at an exclusive interview session at Mount Elizabeth Hospital in Singapore.



Star Health: *What are the milestones achieved in your clinical practice in the field?*

Dr Patrick Tan: Well, we achieved different milestones in my long clinical practice in the field of stem cell transplant. Amongst them, we were the first in the world to successfully cure a Thalassaemia Major sufferer with allogeneic stem cell transplant using matched unrelated donors. We also performed successfully stem cell transplant without the need for high-dose chemotherapy or radiotherapy first in the world.

SH: *What is the success rate for stem cell transplant?*

Dr Tan: Cure rates for some of the diseases are as high as 90 per cent. In a sense, it is curing the incurable. Besides, the quality of life is enhanced.

SH: *Why did you came back from America to Singapore?*

Dr Tan: There are several centres for stem cell transplant in America. But there is increasing demand in South East Asia. So I came back with a view to explore the possibilities with a huge diversity.

SH: *Do you have any plan to create stem cell bank?*

Dr Tan: I am not so interested to build stem cell bank, rather I would like to explore the possibilities of stem cell transplant in different clinical approach.

SH: *What makes the cost of treatment so high for stem cell transplant?*

Dr Tan: In fact, we are very much cautious regarding maintaining the standard up to the mark and we don't compromise with the quality. This increases the cost of the treatment.

Q: What are the opportunities?

SH: *What are the possibilities in near future?*

Dr Tan: We are expanding the use of the technique for patients with solid tumours, and other auto-immune diseases.

Experience of a patient

A patient of ALL (Acute Lymphoblastic Leukaemia), not willing to disclose his own identity expressed his experience to the correspondent. He is now completely cured and is under the long term follow-up.

He was diagnosed in our country as a patient of AML (Acute Myeloid Leukaemia) in May last year. Then he went to Thailand for his treatment with a view to get better quality as they were familiar to the hospital earlier. The hospital started conventional treatment with chemotherapy and radiotherapy, but the condition of the patient could not improve. Rather it was decreasing day by day. At this situation the family members of the patient asked the hospital to perform stem cell transplant as a last chance of survival. But the hospital was not willing enough to do so. They argued for the conventional therapy.

Meanwhile, they contacted with Dr Patrick Tan of Mount Elizabeth Hospital. Seeing all the medical reports he suggested to come to Singapore and perform a stem cell transplant from his own younger sister who had a well match. Finally, the sophisticated but simple procedure was done and the patient is completely well. Now he is under long term follow-up of Dr Tan.

Facts about facial palsy

Bell's palsy is the sudden partial or complete paralysis of one side of the face. Palsy is the medical term for partial or complete paralysis; Bell's comes from Sir Charles Bell, the 19th century Scottish physician who first described the anatomy and function of the facial nerve.

Symptoms

Symptoms include numbness, a sagging eyebrow, an inability to close one eye completely, and the mouth being drawn toward the unaffected side of the face. Some people have decreased tearing (dry eye) and a loss of taste on the same side of the tongue as the palsy. Another common feature is ear pain; the ear on the affected side becoming abnormally sensitive to loud noises.

Onset in just a day or two is one of the hallmarks of the condition. If facial paralysis occurs more gradually, it is not Bell's palsy and suggests other causes of nerve damage, including cancer.

The condition can be very upsetting. It distorts the face, makes it difficult to eat with the mouth close, and slurs speech. But about 70 per cent of patients have a full recovery within several months and about 15 per cent have minor, residual weakness.

The anatomy

You have a pair of intricately branched facial nerves on the right and left side of your face. They control the mouth, eyelid, nose, and cheek muscles. Some branches "wire" the tear ducts and the salivary glands. Others carry signals from the tongue back to the brain.

Each facial nerve travels from the brain to your face through a tiny, tortuous passageway in the thick part of your skull just behind your ear. Most cases of Bell's palsy occur when the nerve inside the narrowest part of that passageway becomes inflamed. That starts a vicious cycle of swelling, nerve compression, interruption of the nerve's blood supply, and death of nerve cells. When the nerve can no longer carry incoming and outgoing signals, partial or complete paralysis develops.

Rarely, new nerve fibres that grow back after paralysis connect to the wrong facial muscle. This can result in lasting damage, and cause one or several of the following:

λ blinking when attempting to smile

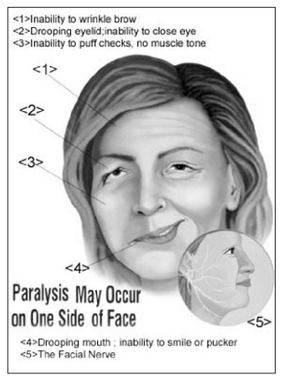
λ involuntary movement of the corners of the mouth when closing the eyes

λ twitching

λ facial spasms

λ the formation of false "crocodile" tears at the same time as saliva.

Causes



The cause of the initial inflammation has been the big mystery. Now doctors believe that in most cases it is triggered by an infection of the facial nerve by herpes simplex virus, the same virus that causes cold sores. The herpes simplex virus can be in your body for years. No one knows why a dormant infection "wakes up." Experts theorise that the immune system may let down its guard in response to stress or even a minor cold.

Other infectious diseases -- including Lyme disease (spread by animal ticks) and, rarely, HIV -- may cause sudden facial paralysis. Varicella-zoster virus, a related herpes virus and the cause of chickenpox and shingles, is another cause.

Diagnosis and treatment

In most cases, no diagnostic tests are needed.

Injured nerves outside the brain and spinal cord have a remarkable ability to heal, which is why most people will recover from Bell's palsy without any medications.

Even so, it is now standard practice for all patients to get a strong anti-inflammatory corticosteriod and an antiviral medication. Early treatment within two or three days after symptoms first appear, improves the chances for a full recovery by about 20 per cent.

The thinking is that after several days, the damage to the nerve is a fait accompli, so damping inflammation will not do much good. And most antiviral medications, regardless of the virus, work best if taken during active infection, before the virus has a chance to proliferate. So if you think you have Bell's palsy, see a doctor -- preferably a neurologist with some experience with the disease -- right away.

The merits of massage

Physiotherapy may stimulate recovery from a mild attack of Bell's palsy, though evidence is slight. The following may be advised:

λ Massage the face using a moisturiser.

λ Exercise the facial muscle sin front of a mirror.

λ Apply gentle heat to reduce any pain, using a microwaveable pad for example.

Bell's palsy may make it hard to close the eyelid. These safeguards can help stop the surface of the eyeball drying out:

λ Using a finger, regularly close the eyelid to moisten the eye.

λ Wear protective glasses or an eye patch, to guard against dust.

λ Tape the eye closed for sleeping.

λ Use "artificial tears" (eye drops) to keep the eye moist.

Source: Health and Nutrition

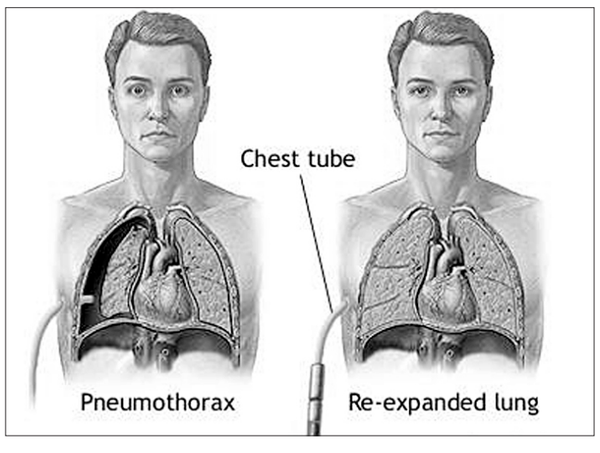
Treatment of collapsed lung

DR MD HABIBE MILLAT

Pneumothorax (condition where air or gas is in or around the lungs) is commonly known as a collapsed lung. In fact, pneumothorax is collection of air between the outside surface of the lung and the inside surface of the chest wall, resulting in collapse of the lung on the affected side. These two surfaces are lined with a smooth membrane called pleura and normally are in contact with each other, but they can become separated when air, fluid or blood collects between them.

Most cases of pneumothorax result from an injury to the lungs or chest wall, such as -- penetrating injuries, blunt trauma, medical procedures, like instrumentation or a lung biopsy. Occasionally, a collapsed lung can occur without any direct injury to the lung or chest. This is called a spontaneous pneumothorax.

Another type of collapsed lung is called tension pneumothorax, which is a medical emergency. Patients may die within minutes if not treated properly. It occurs when a growing air pocket causes increased pressure within the pleural cavity. This collapses the nearby lung and can push the heart and major blood vessels to the unaffected side of the chest. This movement can cause a life-threatening drop in blood pressure. Tension pneumothorax most commonly occurs in people with penetrating chest injuries.



Symptoms

Symptoms of pneumothorax include sudden shortness of breath, painful breathing, sharp chest pain, often on one side, chest tightness, engorgement of the neck veins (in tension pneumothorax), low blood pressure or shock (in tension pneumothorax).

Diagnosis

Patients develop shortness of breath or chest pain suddenly. Underlying lung diseases, family history and smoking habits are additional risk factors. Your doctor's physical examination will focus on your general appearance, your vital signs (temperature, pulse, breath rate, blood pressure), and your heart and breath sounds. Typical exam findings in pneumothorax may include low blood pressure, rapid heart rate, low levels of blood oxygen, loss of normal breath sounds in the part of the chest where the lung is deflated, a hollow sound when the fingers are tapped on part of the chest, a shift in the normal location of heart sounds.

A chest X-ray is the best way to confirm that you have a pneumothorax. A CT scan may be needed in some cases.

Treatment

Pneumothorax can be treated in several ways. Pneumothorax usually does not require emergency treatment unless a tension pneumothorax, which requires prompt removal of air from the pleural space. When the pneumothorax is not the tension variety, its treatment will depend on its size, the patient's symptoms, whether it is a recurrent problem, and whether the hole in the lung or chest wall has sealed itself.

Treatment options

1. Simple observation, waiting for the air in the pleural space to be absorbed by the blood stream;

2. Removal of the air through a tube that is inserted through the chest wall into the pleural space (the tube may be removed immediately after the air has been aspirated, or it may be left in place attached to a drainage system for several days);

3. Surgical procedures. The surgical approach is generally reserved for recurrent pneumothorax.

4. A chemical injection in to the pleural cavity that fuses the lung and chest wall together (pleurodesis)

Once the cause of pneumothorax is treated, a collapsed lung usually will return to normal within 48 to 72 hours. Recovering from a collapsed lung may take up to several weeks. Once a pneumothorax has healed, there is usually no long-term effect on your health.

Persons who have had one pneumothorax have an increased risk of a recurrence. Quitting smoking and avoid changes in air pressure, such as from flying in unpressurised aircraft can reduce your risk.

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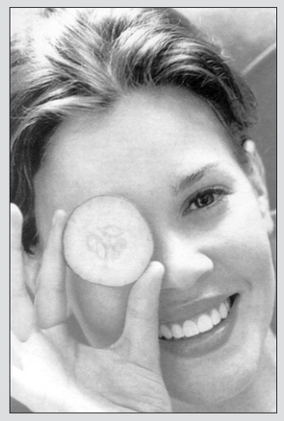
Eye care

Perk up tired eyes



Has a cold left your eyes red, puffy, and tired-looking? To make the swelling go down and remove the fluid out of your sinuses, place a cool compress. There are two options -- Cotton pads moistened with cucumber juice and stored in the refrigerator; or chamomile tea bags soaked in ice water. Place the pads/bags on your eyelids for 15 to 20 minutes.

A feast for your eyes

Earlier, eggs broke free of their artery-clogging reputation. Now, scientists have discovered a new reason to crack one open. Eating eggs is one of the best ways to save your eyesight, thanks to lutein, antioxidant compound that has been shown to help preventage related macular degeneration (eye disorder in elderly patients, where fluid leaks into the retina and destroys cones and rods, reducing central vision), according to a recent Tufts University study.

Lutein has several purported health benefits, including possible protective effects against colon cancer and breast cancer. But the strongest evidence supports lutein's ability to protect the eye from cataracts and macular degeneration, the leading cause of blindness in older adults.

Lutein is deposited in the retina and is especially concentrated in the macula, the critically important retinal structure that transmits colour images to the brain. The macula may sustain significant damage over time, especially from sun exposure and free radicals. Sun exposure also damages the lens of the eye and contributes to the development of cataracts. Researchers speculate that lutein may act as a 'shade' to protect the delicate structures of the eye.

One small study found that lutein improved vision in people who already have cataracts. But these benefits has not yet been proven in large clinical trails.

Eggs offer lutein in its most bioavailable form. Other good sources are leafy greens.

Source: Health and Nutrition

Eating eggs is one of the best ways to save your eyesight

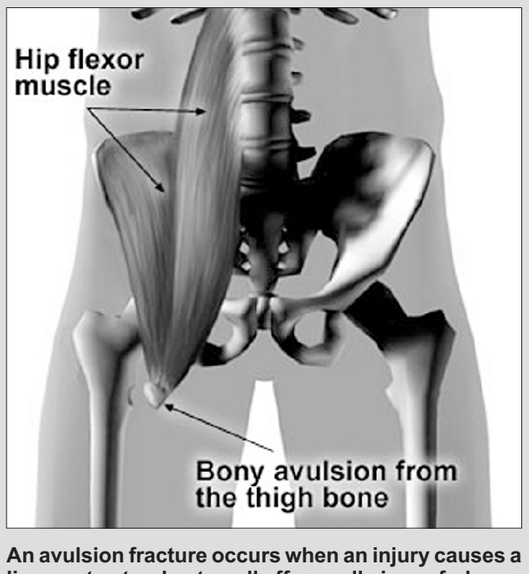
Did you know?

What is an avulsion fracture?

An avulsion fracture occurs when a ligament or tendon attached to a bone pulls away part of the bone. This may occur due to direct trauma, such as a hard tackle in football. It may also be caused by indirect trauma, such as an aggressive pivot in soccer or basketball. This type of fracture can also be associated with serious injury to the involved ligament or tendon.

Small avulsion fractures usually don't need surgery or casting. Treatment typically includes icing the affected area and rest. Small avulsions rarely cause any problems after the injury heals although they may still be visible on X-ray.

Surgery to reattach the bone fragment may be required if the fragment is large and widely separated from the bone and is associated with significant tendon or ligament detachment. In children, avulsions that occur on a growth plate areas of cartilage that have not yet turned to bone may also require surgery. Consult a doctor about the best treatment for your specific injury.



An avulsion fracture occurs when an injury causes a ligament or tendon to pull off a small piece of a bone. A common avulsion fracture (above) involves the hip flexor muscles (iliopsoas) and thighbone (femur).