



Leave the old pacemaker in?

To the Editor:

In their recent article Dr. Z. Iakobishvili et al. reported 10 patients with two pacemaker systems and a follow-up of less than 3 years [1]. During our work in the Pacemaker Clinic, Heart Institute, Sheba Medical Center, we performed this procedure in 25 patients (out of more than 2,000). The old pulse generator was programmed similarly to that described by Iakobishvili et al., to its lowest rate, lowest output and highest sensitivity to avoid interference. During the follow-up of 6–22 years, 10 patients are alive (1 of whom underwent a heart transplant), 1 patient was lost to follow-up, and 2 patients had the old system removed because of probable interference or insecurity in having two systems. Twelve patients died due to longevity or evolution of their heart disease, and not because of pacemaker interference.

In view of the long survival of our patients without mortality or morbidity due to the presence of the two systems, we agree with the authors' conclusion that in clinically indicated cases it is feasible to implant a new device in the contralateral site without explanting the old pulse generator, thereby avoiding an additional surgical procedure and reducing periprocedural complications.

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Hyperglycemia and acute ischemic stroke

To the Editor:

We would like to comment on the recent and timely review and editorial by Royter et al. [1] and Schwammenthal and Tanne [2]. Implementation of tight glucose (metabolic) control in an acute medical setting is a multiphase, multidisciplinary and complex task, which nevertheless can be achieved with gratifying results. Our previously successful experience in post-CABG patients [3] had taught us that implementation plans need to take into account several aspects not at first apparent when addressing medical concepts and misconceptions.

- Sliding scales for the treatment of hyperglycemia with a short-acting insulin according to bedside glucose meter. This obsolete practice is inherently flawed as it treats the metabolic disorder post factum. Its use should be discouraged along with the irrational (physiologic and pharmacologic) practice of intravenous bolus insulin injections.
- Hyperglycemia is less dangerous than hypoglycemia. This misconception was well addressed in the articles mentioned above [1,2]. But it should be emphasized that although glucose might directly be detrimental in an acute setting, it is probably the underlying metabolic milieu that is the culprit. Hyperglycemia is a marker for a metabolic disorder reflecting insulin resistance and relative insulin insufficiency and results in disrupted energy metabolism with its consequent intracellular ATP depletion and increase in several toxic by-products such as lactate, FFA and FFA derivatives. This emphasizes the need for continuous insulin supplementation.

- Setting the target metabolic goals of the ACEAA. The attainment of tight glucose control (110 mg/day) is a gradual process. It took the "Portland Group" almost a decade to gradually achieve target goals [4]. With today's experience these goals can be attained sooner, still using cautiously small steps according to local departmental resources. Specifically, when at first intravenous protocols cannot be fully applied, long-acting basal insulin such as insulin glargine can be used.
- Insulin protocols are straightforward, thus easily followed by nurses. This is a major fallacy. Nurses are the most crucial element for the implementation of tight metabolic control in an intensive medical setting. They should be a central partner in the process of identifying the need and adopting the most applicable protocol, aims and resources for tight metabolic control. They should also be involved in the academic aspects of patients' metabolic management.

Now that the importance of metabolic control on medical outcome is apparent, one cannot choose to avoid its implementation but to utilize the local multidisciplinary resources while accordingly modifying goals and using new technologies (e.g., continuous glucose monitoring) and medications.

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Procedural sedation

To the Editor:

We wish to congratulate Drs. Shavit and Hershman for their significant and timely review "Management of children undergoing painful procedures in the emergency department," which brings to the fore the importance of "procedural sedation" in children [1]. The article offers the opportunity to stress that, despite the use of commonly standard analgesic and sedative drugs, pain and anxiety are suffered by adults as well as children in both the emergency situation and during a number of therapeutic and diagnostic procedures. As the authors acknowledged, patient distress and suffering may have immediate and prolonged behavioral consequences and may reduce patient compliance with the medical treatment. The search for new approaches to alleviate pain and reduce anxiety continues to challenge modern medicine.

The authors address the pharmacologic principles of sedation and analgesia; non-pharmacologic approaches were mentioned only briefly. It is well known that the pain sensation has an intense psychological component that requires conscious attention in order to be perceived. Since people have only a limited amount of attention available at any particular time, using a technique that diverts attention away from treatments leaves the patient with less attention available to process the incoming signals. A variety of non-pharmacologic techniques as adjuncts to pain drugs have been used to divert attention with some success [2]. Techniques of affective distraction include music, verbal suggestion, plus distraction and guided imagery with TV and videotapes. For example, a recent study in *Pain* found that the use of distraction modalities, based on the effectiveness of an audiotape given to

children before and after tonsillectomy surgery, resulted in a significant reduction in pain and anxiety [3]. The tape included deep breathing exercises, music and suggestions for picturing a favorite place.

Modern technology has provided a new promising psychological distraction tool to supplement medication – Virtual Reality (VR) Immersion therapy. Virtual reality uses advanced computer techniques so that users can feel that they are immersed in the virtual environment. VR systems that use a head-mounted device with high resolution and earphones occlude the visual and auditory stimuli of the real environment and grab the user's attention with new images and sounds using interactive 3D computer programs. Pioneering research using virtual reality as an adjunct to analgesics was conducted during burn and wound care by Dr. H. Hoffman from the University of Washington in Seattle [4]. A study of experimental thermal pain compared functional magnetic resonance imaging (fMRI) scans with and without VR exposure [5]. VR significantly reduced pain-related brain activity in regions known to be involved in pain perception and also resulted in fewer subjective reports of pain.

The role of VR treatment and its contribution to influence and diminish the pain experience and facilitate healing is currently being studied in several centers around the world including Israel [4–6]. Research is underway at Hadassah Medical Center and the LILT laboratory at Haifa University to investigate experimental ischemic pain, pain relief during post-traumatic physical therapy, and post-stroke rehabilitation [6]. Additionally, the Sonarion-Hadassah College Virtual Reality Center is developing software programs for the successful use of VR designed to be appropriate for individual differences associated with need, age, and cognitive, emotional and cultural factors.

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Fibromyalgia: Ten Hot Questions and Comments

To the Editor:

In a debate published in this Journal (2004;5:885–8), fibromyalgia (FM) was labeled by one participant as "chronic musculoskeletal disorder," by the other as a "continuous diagnostic label applied to individuals, who complain of musculoskeletal pain," and by the third as "a syndrome." FM seems to act as an epidemic, with many medical, public and possibly also medico-legal aspects. The S.O.S sent out therefore calls for another look at the problem. I present ten short questions and comments that require further debate and hopefully some answers.

One: FM cannot be named a "syndrome." The third participant describes a clinical picture consisting of many signs and symptoms. In FM there is one single symptom: complaint of pain.

Two: Strangely enough, in order to diagnose FM we are allowed to skip 7 (about 40%) of the suggested 18 diagnostic pressure points and be satisfied with 11 points only.

Three: What about a patient who has muscle pain only, in whom only 8 or 9 or even 10 sensitive pressure points have been found?

Four: The term myalgia has to be proven. To the best of my recollection I

never heard a patient complain of "muscle pain." What we hear is complaints of regional pain: headache (but not brain pain), pain in the neck, the back (but not vertebral pain), and abdominal discomfort. But not muscle pain. And if there is no direct complaint of myalgia, why give the diagnosis of FM?

Furthermore, in FM, while checking the pressure points, we press primarily on skin – which has the largest number of nerve endings. The conclusion therefore is that while pressing on the skin we in fact cause muscular pain, although this cannot be proven (whoever has an i.m. injection shivers at the moment when the needle penetrates the skin).

Five: The painful pressure on the skin reaches, through muscle, the bone and the pain-receptive nerve endings in the periosteum. Actually, the pressure points are situated in the regions where the skin lies near the underlying bone. Why are there no diagnostic pressure points in the large abdominal muscles, in the middle of biceps humeri, biceps and quadriceps femoris, triceps surae, etc. – is it because all of the latter are at a relatively greater distance from the bone?

Six: When checking the patient why do we exert a very heavy (and, probably, very painful) pressure (4 kg per digital pressure point)? The only answer seems to be that only such a heavy pressure can reach the periosteum, which is highly sensitive.

Seven: Despite the frequent diagnosis of "myalgia," on physical examination in all such cases we were unable to find any active or passive limitation of muscle movement and there were no complaints of pain on passive and active muscle motion except for arthralgia, whenever present.

Eight: Chronic pain seems to be involved in our lifestyle. In some of our FM patients, we had the impression that this diagnosis was rather a cause for disability requests. Is this one of the reasons that FM is being diagnosed primarily in the western world, but only rarely in developing countries and rural areas? [1]. On the other hand, one wonders whether the label of FM could also be a trigger for a "legal usage" of certain "unusual" drugs [2].

Nine: Many additional questions require answers, such as: why are the

majority of FM patients women? Why are most of them young or middle-aged?

Ten: Pain is real, whether in the skin, muscle or periosteum. The lack of specific and definitive diagnostic changes, the high familial incidence of FM, and the factors already mentioned, call for a look into other etiologic possibilities that might explain this entity. And three major diagnostic fields come into mind. The first is a possible metabolic or (neuro-)endocrine disorder including hypothyroidism and diabetes [3,4]. The second possibility is a sub-clinical chronic infection, as we observed in our study group [5]. The third is a sub-clinical intoxication due to the abnormal quantity of chemical products to which we are exposed in daily life, such as face creams, make-up and perfumes [6], special herbs [7], diet products, conserved foodstuffs, special drugs (hormones), cleaning products, electronic devices, etc.

For the present, FM seems to be only an unfortunate epidemic-producing label.

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Systemic scleroderma and Addison's disease

To the Editor:

We present a rare case of systemic scleroderma associated with Addison's

disease in an 11 year old girl. Anamnesis revealed only common infectious diseases including varicella; there was no history of tuberculosis. The first symptoms of the present illness (juvenile systemic sclerosis) arose 3 years earlier with vomiting and recurrent episodes of abdominal pain. Bluish discoloration, with shiny scaly skin, and decreased mobility developed over the fingers and toes. She complained of extreme fatigue and difficulty in walking.

X-ray of the chest showed numerous strip-like shadows of medium intensity with reticulation. On a more detailed CT examination, honey-combing was observed as well as non-homogenous lung parenchyma with increased lung density of a milky glass appearance. Lung function showed combined ventilatory disease with a dominant restriction, and a moderately reduced vital capacity for carbon monoxide and present normoxemia and normocapnia. Bronchoscopy was not performed. A diagnosis of advanced lung fibrosis with a picture of fully developed HRCT was established.

Corticosteroid pulse therapy with solumedrol was initiated, but the patient was unable to tolerate this therapy. She was hospitalized in the National Institute for Rheumatic Diseases in 2004 and was diagnosed with Raynauds syndrome and sclerodactyly involving all the extremities, livedo reticularis, microstomia, smoothing of nasolabial folds, mild deformities of both ear lobes, and thickening of the skin of neck and chin. Further examination revealed cardiopulmonary compensation, tachycardia and hypotension (systolic 95 and diastolic 65 mmHg).

Laboratory tests revealed positive antibodies to gliadin and ovalbumin, and celiac disease was considered in the differential diagnosis. Due to the high concentration of chloride in sweat, screening for gene mutations for cystic fibrosis was performed, but the result was negative. Erythrocyte sedimentation rate was 71 in the first hour and 94 in the second; other findings included IgG 7.9, IgA 1.7, IgM 1.6 units, negative rheumatoid factor, serum positivity of antibodies against topoisomerase and of U I RNP (20 April 2004), negative antibodies against the cortical zone of the suprarenal gland, increased levels of alpha-1-antitrypsin,

and positive titer of antiglutin antibodies in sweat. The patient was also diagnosed with hypocortisolemia after seeking the cause of the growth retardation. There was no deficit in growth hormone secretion and catecholamine levels were in the normal range. Besides fasting cortisol deficiency (20 mol/L), after ACTH stimulation a mild increase of cortisol was observed (60 and 74 mol/L at 60 and 120 min respectively). These findings were indicative of Addison's disease (17 July 2004). Treatment with prednisone was later changed to hydrocortisone. MRI examination of adrenals was normal.

A previous review of the available literature revealed a similar combination of autoimmune diseases in only one patient – an adult [1]. In our case this rare combination of autoimmune diseases occurred in a child. The diagnosis of Addison's disease in this patient was

established in the differential diagnosis of growth retardation associated with extreme tiredness and weakness accompanied by skin hyperpigmentation (a common symptom in both Addison's disease and scleroderma) [2]. Based on the observations thus far we were unable to prove that the Addison's disease accompanying scleroderma is of an organ-specific autoimmune origin, since the presence of antibodies against adrenal cortex was not detected. An infectious etiology was unsubstantiated. We suggest that the adrenal insufficiency was most likely due to the underlying disease – systemic scleroderma, in the course of which gradual fibrosis of adrenal glands occurred. However, the MRI did not prove our hypothesis.

After the pulsed corticoid therapy we observed a slight improvement in the functional parameters of the lungs and

stabilization of the X-ray findings. Combination therapy of hydrocortisone (cortef 10, 5, 5 mg) with imuran 25 mg and mifflonid 2x2 puffs stabilized the condition of our patient.

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Capsule

Run, rat, run for your health

Human epidemiologic studies have suggested that low aerobic capacity is a strong predictor of mortality. Researchers compared two lines of rats produced by 11 generations of genetic selection for high or low scores in endurance running. Rats with low aerobic capacity had many of the risk factors that define metabolic syndrome, including high blood pressure, elevated

levels of plasma triglycerides, and impaired glucose tolerance. Preliminary expression data were consistent with a decline in mitochondrial function in the unfit rats.

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E. Israeli



Capsule

FDA approves Israeli device

ExAblate, an ultrasound device developed by the Israeli company InSightec, has been approved by the U.S. Food and Drug Administration for the treatment of uterine fibroids. The approval followed trials on 109 women in seven medical centers around the world. Significant improvement was reported in 71% of cases. The system uses ultrasound waves to break up the fibroids, clumps of tissue that can cause miscarriages, painful menstruation and related problems in women. It may also provide an alternative to a hysterectomy. But, the FDA cautioned, the ExAblate 2002 System is not intended for women who wish to become pregnant in the future. According to the National Institutes of Health about 80% of women suffer from uterine fibroids at some point in life. Symptoms include pain, bleeding

and uterine swelling, accompanied by a heightened need to urinate, but many women have no symptoms. Up to 25% will eventually require a hysterectomy and the ExAblate proffers a non-invasive alternative to many. While fibroids are sometimes treated with hormone therapy, the growths tend to recur. The system uses magnetic resonance imaging to pinpoint the non-cancerous tumors. Heat from carefully guided ultrasound waves then selectively kills the fibroid tissue, which is flushed from the body naturally. The treatment is practically painless and obviates the need for hospitalization, which sharply reduces healthcare costs – patients lost an average of 1.2 working days compared with 19 in those who underwent hysterectomy.

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