1. What's scleral tonometry?

What is scleral tonometry? At what age should routine tonometry start?

Question submitted by:
Dr. A. Franklin
Toronto, Ontario

There is no true scleral tonometry. "Digital" scleral tonometry involves palpating the globe through the upper lid using two fingers (like testing for fluctuation in an abscess). A rock hard eye—as in acute glaucoma—can be easily detected, but the test is too insensitive for any other purpose. All accurate modern tonometers (air puff, applanation, strain gauge) are calibrated against a corneal thickness of 545 microns. The Schiötz corneal indentation tonometer becomes even more inaccurate when scleral rigidity is low, as in high myopia. The ophthalmodynamometer depresses the sclera with a spring plunger, while the observer simultaneously watches for closure of the central retinal artery (CRA). This measures the CRA pressure and is, therefore, not a tonometer in the true sense.

Tonometry (measurement of intraocular pressure [IOP]) can begin in the young adult with routine eye examinations.

Elevated IOP can indicate possible glaucoma risk, but tonometry is a poor screening tool, since many glaucoma patients will have IOPs at or below the accepted upper limit of normal (normal range 10 mmHg to 22 mmHg).

Ophthalmologists use IOP in conjunction with visual fields, optic nerve cupping, retinal nerve fibre loss and other factors to establish a diagnosis of glaucoma. Tonometry is used to determine the effectiveness of glaucoma therapies, such as medication, laser trabeculoplasty and glaucoma filtering surgery in lowering IOP to a "safe" target level.

Answered by:
Dr. Malcolm Banks

2. Cyst assistance

What should I do with a cyst < 1 cm on the thyroid?

Question submitted by:
Dr. France de Carufel
Laval, Quebec

Without more information and for the purpose of discussion, I am assuming it is a non-palpable, solitary cyst in an asymptomatic, euthyroid patient that was discovered incidentally on an ultrasound done to evaluate for something else.

In a patient without any risk factors for thyroid cancer, such as history of radiation to the neck, personal or family history of thyroid cancer, *etc*., I don't believe any further intervention other than follow-up clinical assessment by palpation of the thyroid is necessary.

Answered by:
Dr. Hasnain Khandwala

3. Conservative management for spondylolisthesis

A patient has spondylolisthesis due to degenerative osteoarthritis. She also has scoliosis. Does this require anything besides conservative management if she does not have any neurologic symptoms?

Question submitted by:
Dr. Ilona Grymonpré
Nelson, British Columbia

Osteoarthritis of the facet joints in the lumbar spine, particularly at the L4-L5 level, may result in forward slipping of L4 on L5. This may be a cause of mechanical back pain and, at times, variable radicular pain.

In the absence of important and persistent neurologic symptoms, treatment should be conservative. Patients should be reassured that the spine is not dangerously unstable and that a vertebral body will not "drop over the edge." No physical or manipulative treatment intervention is able to realign vertebral bodies.

Mechanical strengthening of the paraspinal vertebral muscles achieved by a regular program of exercising is likely the single most important treatment modality. Although use of a lumbar support corset may provide some relief for severe pain exacerbation, continued use should be discouraged.

Answered by:
Dr. Mary-Ann Fitzcharles

4. An appointment with BPD

Do you have any quick pearls of wisdom to deal with borderline patients in the office?

Question submitted by:
Dr. Paige Steciuk
Midhurst, Ontario

Borderline personality disorder (BPD) is common and patients with this diagnosis present particular challenges in a primary-care setting. An excellent article, "Borderline personality disorder: Office diagnosis and management," is well worth consulting.[1]

The authors recommend a neutral, structured environment (physician and staff remaining neutral in attitude and behaviour, avoiding excessive accommodation and maintaining consistent interpersonal boundaries) and conservative medical management (neither overresponding nor underresponding to the patient's medical problems). The physician should attempt to establish a clear division between medical and psychiatric issues. Self-destructive behaviours generally require specialized psychiatric intervention and consultation with a psychiatrist may be helpful in avoiding problems with psychotropic drugs.

Answered by:
Dr. Pierre Chue

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5. Sutures and scars

Recent studies show "gut" absorbable sutures are equal to "nylon" sutures on facial cosmetic outcome. What about "braided" absorbable sutures?

Question submitted by:
Dr. Robert Saunders
Fort Lingley, British Columbia

Scar outcomes in facial cosmetic surgery depend on a multitude of complex variables. Among those, the choice of suture material is one important consideration. While recent studies comparing absorbable versus non-absorbable closure material have shown no difference in aesthetic outcome,[1-4] different suture materials still incite a graded inflammatory response. Braided absorbably sutures will last longer and may cause "railroad track" scars. Therefore, we use non-absorbable sutures and consistently remove them on the fourth post-operative day.

It must be emphasized that following strict guidelines in all elements of proper wound closure techniques is critical.

Answered by:
Dr. Peter Adamson

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6. Reflux esophagitis signs

What are the danger signs of reflux esophagitis?

Question submitted by:
Dr. James Sutherland
Winnipeg, Manitoba

Surprisingly, heartburn frequency and severity do not necessarily predict the presence of erosive esophagitis (EE). However, frequent nocturnal reflux is associated with EE.

Complications of gastroesophageal reflux disease include strictures, bleeding, Barrett's esophagus and adenocarcinoma of the esophagus. Progressive dysphagia and weight loss should prompt investigation for peptic stricture or carcinoma. Bleeding may manifest with overt blood loss or symptoms of anemia if blood loss is chronic. Barrett's is difficult to predict clinically, but is more likely in Caucasian, male smokers with a longer history of reflux symptoms.

Answered by:
Dr. Mark Borgaonkar

7. Working up eosinophilia

How should eosinophilia be worked up and/or treated?

Question submitted by:
Dr. David Rose
Toronto, Ontario

Eosinophilia has a varied differential diagnosis. We usually approach such problems in terms of cause and end-organ effect. The history should cover such subjects as allergy and hypersensitivity (seasonal allergens, latex exposure, medication history), travel (helminthic infections) and general symptoms of systemic illnesses, such as malignancies and polyarteritis nodosa. The end-organ effects should primarily cover the skin (hives), gastrointestinal tract (diarrhea) and pulmonary tract (dyspnea, wheezing, cough). Bone marrow examination may be necessary to rule out myeloproliferative disease.

Treatment is usually symptomatic, but should be guided by the diagnosis. The use of antihistamines can provide good symptomatic relief while awaiting diagnostic results or specialist opinion. Caution should be exercised when it comes to corticosteroid therapy. Although it may offer very good symptom relief, it may also mask the diagnosis sufficiently to confuse the situation.

Answered by:
Dr. Kang Howson-Jan
Dr. Kamilia Rizkalla

8. What to do with plantar warts

Can you please provide some insight into the treatment of infractory plantar warts when home treatments fail?

Question submitted by:
Dr. Katherine Abel
Leduc, Alberta

Sometimes, plantar warts are best regarded as refractory—that is, beyond resonable therapy. Tincture of time is often the best approach, especially if the warts are asymptomatic.

More potent, caustic preparations with salicylic acid or urea can be compounded and followed by paring with good effect. A good example would be salicylic acid 50% in petrolatum. Sometimes, cryotherapy that is properly applied can help, but it is often used inappropriately (either too conservatively or with inappropriate formulations).

Immunotherapy by inducing an allergic response, such as with applications of diphencyprone by a skilled practitioner can work.

Surgical approaches, such as carbone dioxide laser can be helpful. Newer approaches include intralesional injection with candida antigen or using imiquimod. Both attempts are to induce an immune response to eliminate the lesions.

Answered by:
Dr. Scott Murray

9. Be forewarned about fruit

What are the most allergic fruit and why?

Question submitted by:
Dr. Michael Keating
Saint John, New Brunswick

The eight major allergenic foods in North America are peanuts, tree nuts, milk, eggs, soy, wheat, fish and shellfish. Many allergists would now add sesame seed to this list.

Generally, fruits are not as allergenic as the other foods listed above, with notable exceptions. Fruits in the latex family may cause life-threatening allergic reactions in latex-allergic individuals. The fruits in the latex family include avocado, banana, chestnuts and kiwi. Kiwi fruits have been associated with severe anaphylaxis, even in individuals without latex allergy. Mango is a member of the cashew/pistachio family and may cause severe reactions in individuals sensitized to cashews or pistachios.

Most fruits cause contact reactions in the oropharynx in patients sensitized to either birch pollen or ragweed pollens. The fruits in the birch family (apple, pear, peach, plum, nectarine, apricot, cherry) and in the ragweed family (banana and melons) contain a heat-labile allergenic protein that is structurally homologous with the allergenic protein in the respective pollens. The protein is broken down by brief microwaving or by cooking.

People with “oral allergy syndrome” will typically react to fresh, but not cooked, fruits.

Answered by:
Dr. Peter Vadas

10. Ezetimibe for dyslipidemia?

Where does ezetimibe best fit into current management of dyslipidemia? Should "triple therapy" even be considered?

Question submitted by:
Dr. Colleen Webster
Kingston, Ontario

Ezetimibe, a cholesterol absorption inhibitor, reduces blood cholesterol by inhibiting its absorption in the small intestine. Although seldom used as a monotherapy, 10 mg of ezetimibe, once daily, can reduce LDL by 16% and increase HDL by 4%. Ezetimibe in combination with statin achieves the target LDL goal not accomplished with statin alone.

When there are adverse reactions with high-dose statin, such as myalgia or creatinine kinase elevation, ezetimibe in combination with a low-dose statin is recommended. The safety and effectiveness of ezetimibe with fibrates has not been established and, therefore, the use of ezetimibe with fibrates is not recommended until further studies are available.

Answered by:
Dr. Chi-Ming Chow

11. Parents against vaccinating

How should I approach parents who do not want to vaccinate their children?

Question submitted by:
Dr. Katherine Phillips
Caledonia, Ontario

A frank and open discussion is called for in this instance, notably to understand the parents' views and to come to a compromise in the best interest of the child. Certainly, immunization has been one of the major triumphs of modern medicine, and has been so successful that we have forgotten about the horrendous costs of uncontrolled infectious disease and have focused on small and, in some cases, non-existent risks.

In approaching discussions with parents, it is important to be non-judgemental, but also well-informed. Many parental opinions on immunization are based on strong views devoid of facts, and if you are in the same position, reaching a compromise may be problematic. Know which battles to fight. As an illustration, ensuring that a seven-year-old is immunized against tetanus is probably, in the broad scheme of things, more important than having them immunized against pertussis.

An open discussion of the risks and benefits of immunization, including the facts with respect to diseases, such as tetanus, polio and meningitis, not only with use, but that regularly occur in non-immunized children is important.
This discussion will take time and needs preparation. It is important for the parents to understand that you are all working towards the common goal of the best health for their child.

Answered by:
Dr. Michael Rieder

12. Antidepressants and children—risk of suicide?

Is any antidepressant less likely to cause increased self-harm/suicidal ideas in children?

Question submitted by:
Dr. Heather Sylvester
Stratford, Ontario

Within recent years, the effectiveness of selective serotonin reuptake inhibitors has been re-evaluated and only fluoxetine has been recommended for major depression in children and adolescents.

The Food and Drug Administration (FDA) has held joint meetings with its advisory committees to evaluate antidepressants' potential to induce suicidal behaviour. Twenty-four placebo-controlled studies of nine antidepressants in more than 4,400 patients were analyzed. The suicidal rate (*i.e.*, suicidal ideation, suicidal attempts and successful suicide) among pediatric patients receiving antidepressants was twice that among the placebo group. Consequently, in October 2004, all antidepressants received a "black box" for children's use. However, we have to assume that there have been no deaths reported in any of these studies.

With the exeption of fluoxetine, these studies found suicide rates ranging from 2.6% to 7.7%. Only fluoxetine did not show any increase in suicide rates relative to placebo.

From the FDA re-analysis of suicidal events in the 24 randomized controlled trials, for major depressive disorder, venlafaxine had a higher rate (RR=8.84), followed by sertraline (2.16) and paroxetine (2.15), mirtazapine (1.58), fluoxetine (1.53) and citalopram (1.37). When all trials are regrouped, fluvoxamine expressed the higher rate (5.52), followed by venlafaxine XR (4.97), paroxetine (2.65), mirtazapine (1,58), fluoxetine (1.52), sertraline (1.48) and citalopram (1.37).

Although many difficulties in interpreting suicidal behaviour in these studies have emerged:

- suicide is part of major depression,
- terminology is not the same in all studies and
- self-mutilation is not always considered a suicidal behaviour.

So, the Canadian Psychiatric Association has these clinical recommendations for prescribing antidepressants:

In children and adolescents, there is good evidence for benefit only with fluoxetine. There is also some evidence to support increased risks of suicidality with newer antidepressants, with the exeption of fluoxetine. Hence, only fluoxetine is considered a first-line treatment for depression in children and adolescents (level 1 evidence).

Answered by:
Dr. Carmen Beauregard

With the exception of fluoxetine, these studies found suicide rates ranging from 2.6% to 7.7%.

13. Incubating malaria

What is the incubation period for malaria?

Question submitted by:
Dr. Barb Campbell
Kingston, Ontario

This is a complex question, but there is a relatively easy answer for the patient with no pre-existing immunity. For *P. falciparum*, almost all patients will become symptomatic within six weeks of exposure. However, if they have received partial or ineffective prophylaxis or treatment, including antimalarial antibiotics such as tetracyclines, this incubation period may be several weeks longer. For *P. vivax* and *P. ovale*, if not treated with primaquine, a primary infection may relapse months, or sometimes years, later.

Answered by:
Dr. Michael Libman

14. Non-specific findings on ECG

Can you comment on the appropriate investigations of non-specific findings on ECG, such as, non-specific ST-T abnormalities, when the patient is asymptomatic?

Question submitted by:
Dr. Katherine Abel
Leduc, Alberta

The term non-specific ST-T (or repolarization) abnormalities is used when the interpreter is unable to provide an opinion without a risk of error. It is important to know the clinical history and the context in which the electrocardiogram (ECG) is performed. Previous ECGs allow helpful comparisons. If serial changes are present and their locations correlate with anatomic distributions, myocardial ischemia should be suspected. If underlying cardiac condition is suspected, an ECG and/or a stress test should be performed to rule out structural heart disease and ischemia.

Answered by:
Chi-Ming Chow

15. Celecoxib safety

A 65-year-old female who is healthy, but has multiple complaints regarding arthritis (that settled beautifully on celecoxib) is now concerned about the safety of the drug and wants to change. She has elevated BP, but no other risk factors. What do you advise?

Question submitted by:
Dr. Paul Zeni
Georgetown, Ontario

Any treatment intervention should balance benefits and risks. Continued physical activity in a patient with arthritic disease is increasingly recognized as highly desirable. If use of a medication allows a patient to participate in an active lifestyle, this should be seen as an important benefit. In light of recent concerns regarding cardiovascular risks of anti-inflammatory agents (NSAIDs), many patients have found that they can use NSAIDs intermittently, rather than continuously. If the patient is not adamant regarding the use of a cyclo-oxygenase (COX)-2 agent, medication treatment options for periods of increased pain may include the use of acetominophen, tramadol/acetominophen recently marketed in Canada, a topical NSAID or a traditional NSAID with associated gastrointestinal risks. Importantly, not all pain requires drug treatment and non-drug measures should be encouraged.

Answered by:
Dr. Mary-Ann Fitzcharles

Want to know more about COX-2 safety? Read about it in this month's Quick Queries (pg. 69)!

16. Flying with ASA

ASA is not indicated as a preventative anticoagulant on long flights. What is the underlying basis?

Question submitted by:
Dr. Chan
Lloydminster, Alberta

Acetylsalicylic acid (ASA) appears to work best in patients with atherosclerotic diseases in which disruption of the endothelial surface causes stimulation/activation of the platelets, their aggregation and subsequent clot formation. Therefore, it has greater effects in preventing clotting in arteries rather than in veins. ASA inhibits the platelet function without impairing endothelial cell prostacyclin production.

On the other hand, low molecular weight heparin (LMWH) is more effective in any condition where there is immobility of high-risk patients, including long air travel, post orthopedic surgery and trauma. LMWH inhibits factor Xa and has lower binding affinity to bind to several plasma proteins. Several randomized trials confirmed the superior action of LMWH when compared to any oral anticoagulant in preventing deep vein thrombosis

Answered by:
Dr. Kang Howson-Jan
Dr. Kamilia Rizkalla

17. Ménière's Management

What is the up-to-date treatment for Ménière's disease?

Question submitted by:
Dr. Jonathan Murray
Kentville, New Brunswick

Ménière's disease presents with vertigo, tinnitus, fluctuating low-frequency sensorineural hearing loss and a sense of fullness in the ear. Treatment lowers endolymphatic pressure.

Although, a low-salt diet and diuretics often reduce the vertigo, these measures are less effective in treating hearing loss and tinnitus.

In rare cases, surgical intervention, such as decompression with an endolymphatic shunt or cochleosacculotomy, may be required when Ménière's disease is resistant to treatment with diet and diuretics.

Ablation of the hair cells with intratympanic injection of gentamicin may also be effective. Surgery is usually reserved for patients with severe, refractory Ménière's disease.

Answered by:
Dr. Ted Tewfik

Read more about tinnitus in this month's article, "Common Complaint, Practical Approach" (pg. 85)!

18. Medicating anger

What special medications have been helpful in anger management?

Question submitted by:
Dr. Scott Allan
Toronto, Ontario

Anger is a complex physiologic-emotional-cognitive response with multiple potential determinants, both physical and psychologic. Medication is only part of the therapeutic process and should be combined with cognitive-behavioural techniques after adequate assessment and treatment.

Many diverse medications have been used in the management of anger and aggression, including: selective serotonin reuptake inhibitors, lithium, beta-blockers, clonidine, atypical antipsychotics and anticonvulsant mood-stabilizers (sodium divalproex, carbamazepine, gabapentin).

Paradoxical or non/poor responses are not uncommon, thus, choice of medication is often empirical unless treating a possible cause, such as a mood or seizure disorder.

Answered by:
Dr. Pierre Chue

19. Camera endoscopy—what's being missed?

A female, mid-70s, had a year of occult fecal bleeding, ending in transfusion, multiple GI consults and investigations. She was finally referred for camera endoscopy. The diagnosis was a carcinoid tumour in the small bowel. As this test is rarely done, how much small bowel pathology is being missed?

Question submitted by:
Dr. F. McGrath
Delta, British Columbia

It is important to distinguish between occult bleeding (*i.e.*, positive fecal occult blood, but no visible bleeding) and obscure, overt bleeding. The former is almost always benign if no cause is evident on endoscopy, whereas if investigations are negative for overt bleeding (as in this case) it is clear a lesion is going undetected.

Capsule endoscopy involves swallowing a capsule with a camera that transmits images to a recording device, providing images of the small intestine that are vastly superior to contrast radiography. For patients with overt gastrointestinal (GI) bleeding and a negative traditional work-up, capsule endoscopy is a valuable tool that detects the bleeding source roughly 50% of the time.

Answered by:
Dr. Mark Borgaonkar

20. High TIBC, low transferritin—is this significant?

I have a patient with a slightly high TIBC and slightly low transferritin saturation serum FE and a normal ferritin. Are these findings significant? Do I need to do any further tests?

Question submitted by:
Dr. Stacey Saunders
Marytown, Newfoundland

It is important to keep the diagnosis and the clinical question in sight when interpreting laboratory results. Were these investigations ordered for a diagnosis of anemia? If so, it seems unlikely that iron deficiency is the explanation.

Serum ferritin has been demonstrated to be the single most accurate non-invasive method for diagnosing iron deficiency. It has to be interpreted carefully since liver disease and any disorder with an inflammatory component can increase serum ferritin.

Answered by:
Dr. Kang Howson-Jan
Dr. Kamilia Rizkalla

21.

Sever's disease update

Could you please provide updated information on Sever's disease in children?

Question submitted by:
Dr. Deborah Semeniuk
Edmonton, Alberta

Sever's disease, or retrocalcaneal apophysitis, is a self-limited inflammatory condition of the heel produced by stress on the apophysis between the two ossification centres in the calcaneus that develop early in the second decade of life, typically as a result of increased activity, such as sports.

Sever's disease is, thus, a problem in early adolescence, with the peak age between nine and 14 years, with an equal male and female ratio. Typically, the problem begins after the child starts a new sport and presents with pain in the heel, which can be unilateral or bilateral and is classically just below the attachment of the Achilles tendon.

The pain is almost always worse with walking and the patient can develop a pronounced antalgic limp. The site of the pain can be slightly warmer than the surrounding skin and is usually painful to palpation. The pain is worse when the patient's heel is on the ground.

This condition is self-limited and will pass with time, notably as ossification proceeds in the calcaneus. This may take six to 18 months, and in the interim it can be quite painful and limit activity. Therapy includes rest, use of ice and judicious use of non-steroidal anti-inflammatory drugs, such as ibuprofen. Exercises that worsen the condition, such as running up and down stairs (or bleachers), should be discouraged. Gentle stretching exercises can be helpful in relaxing the Achilles tendon.

An excellent source of information for parents, including how to perform stretching exercises, is found at **familydoctor.org**, the Web site of the American Academy of Family Physicians.

Answered by:
Dr. Michael Rieder

Sever's disease is a problem in early adolescence, with the peak age between nine and 14 years.

22. Topical steroids for eczema?

Should topical steroids be used in the management of eczema?

Question submitted by:
Dr. G. Loy Son
Guelph, Ontario

Topical steroids are still the mainstay of eczema therapy. The advent of newer steroid substitutes—the calcineurin inhibitors, such as tacrolimus and pimecrolimus—have increased our therapeutic options, but we still rely on steroids a great deal.

Steroids are relatively inexpensive, well-tolerated and effective. Basic skin-care techniques and supportive management are able to moderate the amount of steroids used in many cases. The calcineurin inhibitors avoid the skin thinning and systemic steroid effects of topical steroids, and are particularly useful on sensitive areas, such as the face. Early use of calcineurin inhibitors can reduce eczema outbreaks, lessening the need for topical steroids. We are using all these agents in balance to achieve the most cost effective combinations, as well as to minimize side-effects.

Answered by:
Dr. Scott Murray

23. Hyperthyroid testing for expecting mothers

What is the appropriate test for hyperthyroidism in the first, second and third trimester of pregnancy?

Question submitted by:
Dr. IG Scrooby
Williams Lake, British Columbia

Thyroid-stimulating hormone and free thyroid hormone levels are the best tests to assess for hyperthyroidism during pregnancy, as changes in thyroxine-binding globulin levels during gestation can give misleadingly high total T4 and T3 levels. Thyroid antibodies may also be useful, but radioactive iodine scan is contraindicated. In addition to the usual causes of hyperthyroidism, the entity of human chorionic gonadotropin-mediated hyperthyroidism also needs to be considered during pregnancy.

Answered by:
Dr. Hasnain Khandwala

Addicted to sleep meds?

24.

What is the addictive potential of newer sleep medications (*e.g.*, zaleplon)?

Question submitted by:
Dr. Daniel Lalla
Cowansville, Quebec

The World Health Organization,[1] defines addiction as the repeated use of a psychoactive substance to the extent that the user is periodically or chronically intoxicated, shows a compulsion to take the preferred substance, has great difficulty in voluntarily ceasing or modifying substance use, and exhibits determination to obtain psychoactive substances by almost any means. Addiction to sleep promoting medications (whether benzodiazepines or the newer non-benzodiazepine "Z-drugs," zaleplon, zopiclone and, in the United States, zolpidem and eszopiclone) is extremely rare.

Regular use of hypnosedatives may be associated with physiologic and psychologic dependence, loss of efficacy (tolerance) and a specific withdrawal syndrome, including rebound insomnia where the sleep disturbance is temporarily worse than that at start-up, but these are specific and discrete pharmacologic phenomena that are not signs of addiction.

Tolerance, rebound insomnia and withdrawal effects are generally considered to be less with the "Z-drugs" than with the benzodiazepines but there is no complete agreement on this point.[2] In populations that abuse drugs, the Z-drugs are usually less preferred than the benzodiazepines[3] (have lower like-ability scores and are cheaper on the street than other prescription hypno-sedatives), but patients with a history of substance abuse and/or a psychiatric history should always have their prescriptions, use of over-the-counter and recreational drug use carefully monitored.

Answered by:
Dr. Jonathan Fleming

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