Significance of Posterior Cervical Lymph Nodes

1. What is the significance of posterior cervical lymph nodes?

Question submitted by:
Dr. Anjali Gupta
Burlington, Ontario

In order to answer this question, we need to summarize the different groups, classifications, and drainage territories of the cervical lymph nodes. Various classifications exist for the lymph nodes of the neck. Older classifications were based on regions of the neck. The most modern is the American Head and Neck Society (AHNS) classification. It is based on six levels of the neck (and six sublevels).

- Level I: includes the submandibular and submental nodes. It drains the oral cavity and submandibular glands
- Level II: includes the superior internal jugular nodes. It drains the nasopharynx, oropharynx, parotid, and supraglottic larynx
- Level III: is composed of the middle jugular nodes. It drains the oropharynx, hypopharynx, and supraglottic larynx
- Level IV: includes the lower jugular nodes. The drainage is from the supraglottic larynx, hypopharynx, esophagus, and thyroid gland
- Level V: is the posterior triangle area. The drainage territory is from the nasopharynx, oropharynx, and cutaneous structures of the posterior scalp and neck
- Level VI: this includes the pretracheal and paratracheal nodes. They drain the thyroid, glottic and subglottic larynx, pyriform sinus and cervical esophagus

In summary, the posterior cervical lymph nodes are located in level V and the draining territory is described above.

A level VII also exists, but it is not mentioned here, since it involves the superior mediastinum.

Answered by:
Dr. Ted Tewfik

Montelukast in a Child for Asthma Control?

2.

Would you start a child on montelukast for asthma control?

Question submitted by:
Dr. R. Herget
Calgary, Alberta

Montelukast is an oral agent used for the chronic control of asthma. Montelukast acts by blocking the effects of cysteinyl leukotrienes, which are the mediators of the inflammatory cascade involved in the pathogenesis of asthma. It should be emphasized that montelukast is not a bronchodilator and is not an appropriate agent for the therapy of acute exacerbations of asthma. There are several properties of montelukast that make it an attractive agent. It is an oral agent that may help with compliance, and it is not a corticosteroid; corticosteroid adverse effects are a common concern for the families of children on long-term asthma therapy. However, montelukast has been demonstrated in several studies to be less effective than inhaled corticosteroids, and monotherapy with montelukast is associated with an elevated risk for acute exacerbations of asthma. Montelukast may also be less effective in children younger than two-years-of-age in comparison with older children. The evidence to date suggests that the addition of montelukast to asthma therapy may reduce the number of exacerbations of asthma by a third, and most therapeutic guidelines suggest that adding montelukast would be useful if inhaled corticosteroids alone are not adequate for the chronic management of asthma. It may also be effective in patients who suffer from allergic rhinitis.

Answered by:
Dr. Michael Rieder

Pancytopenia Finding in a Patient on Mirtazapine

3. Considering the accidental finding of asymptomatic pancytopenia (with a patient on mirtazapine while taking a CBC for another matter), would you consider a regular blood check for all patients on mirtazapine?

Question submitted by:
Dr. Paul Guilbault
Québec City, Québec

Clinicians should be aware of mirtazapine's low potential to induce bone marrow suppression.[1] Premarketing trials involving mirtazapine found the incidence of agranulocytosis to be 1 in 1,000 subjects (0.0011% trial incidence [NNH=909]).[2] Since then, there have been several case reports documented in the literature linking mirtazapine to various blood dyscrasias, such as neutropenia, leukopenia, thrombocytopenia, agranulocytosis, anemia, and coagulopathies.[1,3-7] There is also one case report in the literature of full bone marrow suppression after 13 months of mirtazapine use.[1] Discontinuation of mirtazapine tends to lead to complete recovery, with early discontinuation indicated.[3] Some clinicians have reported that patients will tolerate mirtazapine when it is readministered at a smaller dose than initially used, which makes one consider a dose-dependent factor.[5]

The mechanism of mirtazapine-induced blood dyscrasias is not well understood.[5] Proposed hypotheses include a hypersensitivity/immune-mediated mechanism involving complement-mediated toxicity and mirtazapine-induced antibodies against committed stem cells, proliferating precursors, or mature blood cells.[5] In the case of delayed onset blood dyscrasias, it has been hypothesized that haptenation and accelerated apoptosis may occur.[5]

Given the potential serious consequences of a given blood dyscrasia, it is important for clinicians to monitor CBCs while a patient is taking mirtazapine.[3] A CBC w/differential should be completed at baseline and every three months during the first year of mirtazapine therapy and especially after any dose increase.[3] After the first year of therapy, a CBC w/differential every six months should be performed in order to ensure that a delayed onset blood dyscrasia has not developed. Such monitoring should help identify any asymptomatic patients who develops a blood dyscrasia.[3] If a drop in absolute neutrophil count is noted in an older patient, it may be prudent to discontinue mirtazapine before any symptoms or infection develop.[3] Clinicians should also proactively counsel patients to report any fever, chills, cold/flu-like symptoms, sore throat, muscle aches, mouth ulcerations, or other signs of infection, as these may be indicators of mirtazapine-induced blood dyscrasia.[3]

References
1. Hutchison LC: Mirtazapine and Bone Marrow Suppression: A Case Report. J Am Geriatr Soc 2001; 49(8):1129–1130.
2. Hartmann PM: Mirtazapine: A Newer Antidepressant. Am Fam Physician 1999; 59(1);159–161.
3. Ahmed A: Neutropenia Associated with Mirtazapine Use: Is A Drop in the Neutrophil Count in a Symptomatic Older Adult a Cause for Concern? J Am Geriatr Soc 2002; 50(8):1461–1463.
4. Ozcanli T, Unsalver B, Ozdemir S, *et al*: Sertraline and Mirtazapine-induced Severe Neutropenia. Am J Psychiatry 2005; 162(7):1386.
5. Dholakia R, Schleifer SJ, Ahmed YJ, *et al*: Delayed-onset Mirtazapine-related Leukopenia and Rechallenge. J Clin Psychopharmacol 2010; 30(6):758.
6. Liu X, Sahud MA: Glycoprotein IIb/IIIa Complex is the Target in Mirtazapine-induced Immune Thrombocytopenia. Blood Cells Mol Dis 2003; 30(3):241–245.
7. Demet MM, Mizrak S, Esen-Danaci A: Mirtazapine-induced Arthralgia and Coagulopathy: A Case Report. J Clin Psychopharmacol 2005; 25(4):395–396.

Answered by:
Dr. Joel Lamoure
Supporting Contributor:
Professor Jessica Stovel

Management of Post Polio Syndrome

4.

What is the management (medical and other) of post polio syndrome with regards to immigrants who have had a polio infection in childhood?

Question submitted by:
Dr. Meeta Vijh
Brampton, Ontario

Some patients with previous symptoms of polio experience a new onset of pain, weakness, and atrophy many years later, typically in the same muscles that were affected by the original illness. New symptoms appear, on average, about 25 years after the original infection, and progression is gradual. This syndrome may affect more than one-quarter of previously paralyzed patients. The cause is unknown, but it does not appear to be infectious and may be a physiological attrition of previously damaged motor units. There is no known treatment, other than the usual supportive care.

Answered by:
Dr. Michael Libman

Treatment for Fungal Infections of the Toenails

5.

What is the first treatment for fungal infections of the toenails in the elderly? Do home remedies work?

Question submitted by:
Dr. M Dowdall
Montréal, Québec

Established fungal infections are usually managed with systemic terbinafine therapy, which is the usual first-line agent. Alternatives are itraconazole or fluconazole. Topical agents to date have had disappointing results. I know of no home remedy that works significantly well in healing an infected nail.

Answered by:
Dr. Scott Murray

Gastric Banding Update

6. Can you please update us on gastric banding, intragastric balloon for weightloss?

Question submitted by:
Dr. Kevin C. Smith
Niagara Falls, Ontario

Canadian guidelines recommend consideration of bariatric surgery for adults with clinically severe obesity (BMI ≥ 40 kg/m^2 or ≥ 35 kg/m^2 with severe comorbid disease) when dietary and lifestyle interventions are inadequate to achieve healthy weight goals.[1] Categorically, bariatric surgery can be divided into intestinal bypass and gastric partitioning procedures, though technical overlap may exist.[2] Contemporary gastric banding procedures include banded gastric bypass (whereby a prosthetic band is applied to a gastric pouch) and laproscopic adjustable gastric banding (a prosthetic adjustable band is placed 1 to 2 cm below the gastroesophageal junction of the stomach, creating an adjustable gastric pouch).[2]

A recent meta-analysis assessing the efficacy and safety of various methods of bariatric surgery demonstrated a mean percentage of weight loss of 61.2% (95% CI: 58.1 to 64.4%) amongst all treated patients.[3] These effects were greatest with biliopancreatic diversion or duodenal switch techniques at 70.1% (CI: 66.3 to 73.9%), however, 30 day operative mortality was also the greatest with these procedures at 1.1%.[3] Patients who underwent gastric banding had a mean weight loss of 47.5% (CI: 40.7 to 54.2%), in comparison to 61.6% (CI: 56.7 to 66.5%) for patients having undergone gastric bypass and 68.2% (CI: 61.5 to 74.8%) of gastroplasty patients.[3] Operative mortality was 0.1% and 0.5% for the restrictive bariatric procedures and gastric bypass surgery, respectively.[3] Furthermore, clinically significant improvements were observed in various associated comorbidities, including hypertension, dyslipidemia, diabetes mellitus, and obstructive sleep apnea.[3] Incremental long-term cost utility has also been demonstrated by bariatric surgery in comparison to medical treatment.[4]

References
1. Lau DC, Douketis JD, Morrison KM, *et al*: Obesity Canada Clinical Practice Guidelines Expert Panel. 2006 Canadian Clinical Practice Guidelines on the Management and Prevention of Obesity in Adults and Children. CMAJ 2007; 176(8):S1–S13.
2. Elder KA, Wolfe BM: Bariatric Surgery: A Review of Procedures and Outcomes. Gastroenterology 2007; 132(6):2253–2271.
3. Buchwald H, Avidor Y, Braunwald E, *et al*: Bariatric Surgery: A Systematic Review and Meta-analysis. JAMA 2004; 292(14):1724–1737.
4. Padwal R, Klarenbach S, Wiebe N, *et al*: Bariatric Surgery: A Systematic Review of the Clinical and Economic Evidence. J Gen Intern Med 2011; 26(10):1183–1194.

Answered by:
Dr. Theodore Xenodemetropoulos

Recommendations for Ordering Digital Mammograms

7.

When should a digital mammogram be used/ordered and how often?

Question submitted by:
Dr. Paul Stephen
Scarborough, Ontario

A mammogram can be ordered as a diagnostic tool to investigate a palpable or suspicious breast mass or symptom, or to screen asymptomatic individuals for breast cancer. The initiation and frequency for such testing depends on the patients' individual risk factors.

Digital mammography is a newer technology producing high resolution digital images on computer as opposed to conventional x-ray mammography on film. Digital mammography is more sensitive and equally specific in women younger than 50, radiographically dense breasts, and pre/perimenopausal women. There is no randomized trial data on digital versus conventional mammography.

Screening at 40 in women of average risk is controversial; some professional organizations advocate that it is cost effective and beneficial, while others discourage this practice due to the harms caused by the likelihood of detecting common benign conditions in women under the age of 50. The Canadian Task Force on Preventive Health Care recently summarized the evidence for breast cancer screening and supported mammograms in women 50- to-74-years-of-age but did not support their use in average-risk women outside this range.[1] In women at higher risk of breast cancer, such as those having a first-degree relative, dense breasts, genetic mutation *etc*., evaluation starts earlier and may be done annually depending on individual circumstances.

When ordering screening with any mammograms, it is important for a physician to be aware of the local and national guidelines and the individual patient risk factors and concerns.

Reference
1. Canadian Task Force on Preventive Health Care. Recommendations on Screening for Breast Cancer in Average-risk Women Aged 40 to 74 Years Old. CMAJ 2011; 183(17):1991–2001.

Answered by:
Dr. Cathy Popadiuk

Effectiveness of OTC Cryotherapy Products for Plantar Warts

8.

Does cryotherapy with over-the-counter products actually work on plantar warts?

Question submitted by:
Dr. David Ross
Moncton, Newbrunswick

I have not seen great success with these agents. When compared to the effects of actual liquid nitrogen, the cooling effect of over-the-counter products is minimal. One should keep in mind, however, that a person who may find over-the-counter products effective would not generally seek further dermatology specialist treatment options. Nonetheless, I would not expect a great response to the mild cooling effect of the ethylene glycol or dimethyl ether/propane compared to the almost -200˚C freeze of true cryotherapy.

Answered by:
Dr. Scott Murray

Sucralfate in Cases of IBS with Prominent Diarrhea

9.

I tried sucralfate in cases of IBS with prominent diarrhea symptoms. It worked! Is there any study regarding the effects of this agent on IBS?

Question submitted by:
Dr. Tahmures Bahrami
Pine Falls, Manitoba

Sucralfate is a gastric cytoprotective agent composed of a sucrose aluminium sulfate.[1] Multiple mechanisms of activity have been identified. These includes mucosal binding properties (with an enhanced affinity for ulcerated tissue) that exert cytoprotective activity through the creation of a chemical barrier that inhibits acid diffusion, which enhancrd bicarbonate production and prevents the degradation of gastric mucus, as well as through absorbing bile acids and inhibiting pepsin.[1] Sucralfate has also demonstrated angiogenic properties, increasing mucosal prostaglandin E2, epidermal growth factors (EGF), and bFGF synthesis.[2,3,4] Sucralfate has been investigated in the treatment of patients with functional dyspepsia and has not been found to be superior to placebo in meta-analysis of available evidence.[5]

There is no clear evidence suggesting efficacy of sucralfate in the treatment of patients with irritable bowel syndrome (IBS) within the existing literature, although numerous issues, including poor study methodologies, heterogenous patient populations, and high placebo response rates across RCTs of pharmacological therapies, present significant challenges in assessing all therapies in IBS.[6] Nonetheless, the use of sucralfate for the treatment of patients with IBS can not be recommended at this time.

References
1. Nagashima R: Mechanisms of Action of Sucralfate. J Clin Gastroenterol 1981; 3(Suppl 2): 117–127.
2. Konturek SJ, Kwiecien N, Obtułwicz W, *et al*: Gastroprotection by Sucralfate Against Acetylsalicylic Acid in Humans. Role of Endogenous Prostaglandins. Scand J Gastroenterol Suppl 1987; 140(issue):19–22.
3. Konturek SJ, Brzozowski T, Majka J, *et al*: Fibroblast Growth Factor in Gastroprotection and Ulcer Healing: Interaction with Sucralfate. Gut 1993; 34(7): 881–887.
4. Tarnawski A, Tanoue K, Santos AM, *et al*: Cellular and Molecular Mechanisms of Gastric Ulcer Healing. Is the Quality of Mucosal Scar Affected by Treatment? Scand J Gastroenterol Suppl 1995; 210(issue): 9–14.
5. Moayyedi P, Soo S, Deeks J, *et al*: Pharmacological Interventions for Non-ulcer Dyspepsia. Cochrane Database Syst Rev 2004; (4): CD001960.
6. Ford AC, Moayyedi P: Meta-analysis: Factors Affecting Placebo Response Rate in the Irritable Bowel Syndrome. Aliment Pharmacol Ther 2010; 32(2):144–158.

Answered by:
Dr. Theodore Xenodemetropoulos

Antibiotics for Pharyngitis

10.

If we empirically start someone on antibiotics for pharyngitis and find out the throat swab is negative after 48 hours, should we stop the antibiotics or continue the course?

Question submitted by:
Dr. Roshan Dheda
Bradford, Ontario

The usual recommendation is not to take antibiotics for pharyngitis until the culture (or rapid antigen test) is positive for *Streptococcus*. Still, many physicians do give antibiotics immediately when they have a high suspicion of streptococcal infection, on the grounds that antibiotics can slightly decrease symptom duration and severity when taken early. In this case, the antibiotics should be stopped if the culture is negative. It has become abundantly clear over recent years that adverse effects of antibiotics, especially *Clostridium difficile* infection, are not that rare, even in the community setting. Certainly, in the absence of a positive throat culture, the negative effects of diarrhea, dyspepsia, yeast vaginitis, rashes, allergies, fatigue, *etc*. will outweigh any possible benefits.

Answered by:
Dr. Michael Libman

Management of Nonstreptococcal Upper Respiratory Infection

11. Please comment on the management of nonstreptococcal upper respiratory infection (*e.g.*, *mycoplasma, haemophilus influenza B*).

Question submitted by:
Dr. Tim Cuddy
Burlington, Ontario

Acute pharyngitis is one of the most common presenting complaints in primary care. Most of these are part of common cold or influenza syndromes or other viral etiologies, including mononucleosis. There are few treatment options, although treatment is available for influenza if diagnosed early. Other than β-hemolytic streptococci, bacterial etiologies are uncommon. Gonococcal pharyngitis is typically asymptomatic but may cause mild symptoms. *Arcanobacterium* can cause exudative pharyngitis, and is susceptible to many antibiotics, but many labs do not look for this organism, and treatment trials have not been done. *Chlamydia* and *Mycoplasma* may cause < 1% of pharyngitis and presumably could respond to treatment. Acute bronchitis is almost always viral in origin, regardless of pathogens found in the sputum, and many trials have shown no benefit to antibiotic therapy. Chronic bronchitis is a complex disease and guidelines for treatment are available. The Canadian Thoracic Society, for example recently published an update on chronic bronchitis.[1]

Reference
1. Canadian Thoracic Society Recommendations for Management of Chronic Obstructive Pulmonary Disease – 2008 Update – Highlights for Primary Care. Can Respir J 2008 Suppl A:1A-8A.

Answered by:
Dr. Michael Libman

Bisphosphonate Use with Calcium

12. Are there precautions to using calcium and also using alendronate sodium?

Question submitted by:
Dr. Geza B Molnar
Brampton, Ontario

I am not aware of any specific precautions in using calcium and/or vitamin D supplements when used in combination with bisphosphonates. Adequate calcium and vitamin D supplementation are important in the treatment of osteoporosis. Recently, some concerns have been raised with respect to an increase in CVD in patients taking calcium supplementation. Some meta-analyses have suggested an increased risk whereas others have not. There have been several limitations in these analyses, which have made interpreting the data very difficult. Until more evidence is available from randomised prospective studies, it is recommended to continue with the current guidelines with respect to calcium/vitamin D supplementation.

Answered by:
Dr. Hasnain Khandwala

Diagnosing ADHD in Children

13.

What is the best screening tool for diagnosis of ADHD in children?

Question submitted by:
Dr. Farid Kakavand
Richmond Hill, Ontario

The diagnosis of attention deficit hyperactivity disorder (ADHD) can be a difficult one to make, and care must be taken not to attempt to make the diagnosis too early, as many of the behaviours attributed to ADHD are in fact developmentally appropriate for younger children. There are several simple screens for parents that are available online, with the caveat that these are screening tools only. The Parent's Evaluation of Developmental Status is a tool that can be used in the office and has the advantage of being available in a number of languages. The Pediatric Symptom Checklist is another simple screening tool that can be used for children who are 4- to-18-years-of-age. Both of these are inexpensive and can be used in conjunction with a careful history and physical examination to determine if referral for more specific testing is needed.

Answered by:
Dr. Michael Rieder

Differentiating Between Tinea Corporis and Tinea Versicolor

14.

How does one clinically differentiate between tinea corporis and tinea versicolor in fair skinned individuals?

Question submitted by:
Dr. Chantale Delay
Winnipeg, Manitoba

Tinea versicolor often presents as a subtle, thin scaling that covers the upper torso in geographic areas. The scaling is usually even throughout the lesions and quite fine. It tends to cause pigmentary alterations – especially lightening with sun exposure. Tinea corporis is often more focal with a predominant scale at the edge, giving the classic "ringworm" appearance. Depending on the organism involved, it can be much more inflammatory and show a follicular accentuation. Woods light can be a bit of a help, since some animal-based fungi fluoresce, and tinea versicolor does so very minimally. The KOH preparation is distinctive between the two entities, so a skin scraping and microscopy give an immediate answer.

Answered by:
Dr. Scott Murray

cme