Teaching Points—A 2-minute Mini-lecture
The Rewards of Treating Chronic Headache
By Mark T. Nadeau, MD, MBA, University of Texas Health Science Center at San Antonio

Editor’s Note: The process of the 2-minute Mini-lecture is to get a commitment, probe for supporting evidence, reinforce what was right, correct any mistakes, and teach general rules. In this scenario, Dr Nadeau (Dr N) works with a second-year resident (R2) who is seeing a patient with chronic headaches.

R2: I have to admit that I was not particularly excited to see another chronic pain patient this afternoon. This is a 42-year-old woman with a history of migraines for more than 20 years. The headaches have not been controlled well, and she is here for a refill of her medication.

Dr N: I hope you don’t feel too discouraged. Chronic pain is treatable. There is a lot you can do to help the patients. And chronic headaches are very treatable. You can often help the patient achieve a dramatic improvement. So, how do you know that the patient has migraines?

R2: The patient tells me that she has had migraines for years. She has been given that diagnosis by many doctors. She is just here for refills of her medications.

Dr N: What do you think is the diagnosis? What are the criteria for this diagnosis?

R2: Migraines tend to be unilateral, and the headaches are severe.

Dr N: That’s right. In addition, there is a set of criteria from the International... (continued from page 2)

Information Technology and Teaching in the Office
Advance Directives Online
By Richard P. Usatine, MD, and Craig M. Klugman, PhD, University of Texas Health Science Center at San Antonio

As we teach our students about the major issues in primary care, the benefits of advance directives should not be overlooked. We can role model the importance of an advance directive (AD) by completing our own AD and encouraging and assisting our patients and students to do the same. We have explained to patients that an AD consists of a living will (directive to physician and family) as well as designating a medical power of attorney. We have all handed paper versions to our patients and asked them to complete the form and return a copy to our office, and so few of those forms were ever returned. Also, the time it takes to explain the AD forms may have discouraged you from doing this in all but the most time critical cases (such as a new cancer diagnosis or prior to surgery). Now there are new ways to assist patients, you, your family, and even your students to do their own AD using online forms and online help.

Google has teamed up with Caring Connections to create a system for allowing you and your patients to create a free, state-specific AD and store it online. The Caring Connections Web site (www.caringinfo.org) was created by the National Hospice and Palliative Care Organization with grant support from The Robert Wood Johnson Foundation. In the past 3 years, Caring Connections has distributed more than 2.5 million AD forms (these include medical power of attorney designations). They also provide easy online access to information that helps people understand advance care planning and begin conversations with family and health care professionals.

Google Health is a new password-secured, online Personal Health Record (PHR) that allows users to store, (continued from page 3)
The Rewards of Treating Chronic Headache

Headache Society that was first published in 1988 and updated in 2004. Most clinicians use these criteria—the criteria are not only used in typical headache studies but also in review articles, as found in American Family Physician. We can take a quick look. If you remember the Web site for the International Headache Society (IHS), you can find the criteria there, at http://ihs.classification.org, or you can simply search in Google for International Headache Society or “criteria migraine.”

R2: So, looking at this table—a migraine is a severe, pulsating, often unilateral headache, worsened by routine activity. Right?

Dr N: If you apply the IHS criteria, they only need to have two of the four, plus one of the following: nausea, vomiting, photophobia, or phonophobia. Plus a history of five total attacks; the headaches last 4–72 hours. Why do you think it is important to apply the criteria to your diagnosis? What difference does it make?

R2: I suppose it might mean that the treatment is different.

Dr N: Correct. Even in a patient with a long history of migraines, I like to ask the diagnostic questions to convince myself that the original diagnosis was correct, since that will change your treatment.

R2: On the other hand, I figure that if the headaches are controlled with an NSAID (non-steroidal anti-inflammatory drug), it doesn’t make much difference whether it is migraines or tension headache.

Dr N: Good point. In her case, however, it sounds like she’s having trouble getting pain control. If she truly had migraines, then you could use a triptan for an acute attack, and one of the medications for prophylaxis. But, if she has tension-type headaches, then these medications are not likely to be helpful.

I find it rewarding to work with patients who have migraines. I feel as though I can make a difference. You can improve the clinical course for a lot of patients with headaches, if you understand the diagnoses and the medications.

Getting back to this patient, what do you want to do for her acute headaches?

R2: She is currently taking an NSAID. Maybe I should use something stronger since the headaches frequently require her to miss work. Would we consider a narcotic?

Dr N: There is at least some evidence that the regular use of narcotics is associated with progression of migraines. I would not be opposed to occasionally using narcotics for a very severe migraine, but let’s try a triptan for this patient. How many headaches is she having per month?

R2: Three to four. I think that is probably frequent enough to consider a prophylactic agent.

Dr N: That sounds reasonable to me. Most articles recommend considering prophylaxis when patients have more than two headache episodes per month. Name a medication.

R2: I have seen patients on beta-blockers for prophylaxis; I think I might try that.

Dr N: Not all beta-blockers are equally effective for this use. Unless there is a contraindication to the use of a beta-blocker, I would recommend propranolol or timolol. Evidence to support the use of those two beta-blockers is better than it is for the other beta-blockers. There are several other medications we can consider later if that doesn’t work. What are some other choices for prophylaxis?

R2: I have seen folks on amitriptyline, low dose.

Dr N: That’s a standard one. You can also consider topiramate, valproate, and divalproex. So, if you start her on a beta-blocker, when should you see her back?

R2: I think I will see her back in about a month.

Dr N: Sounds reasonable. That would give you time to look for side effects and also decreased strength and/or frequency of recurrence. Make sure that the she is scheduled to see you and not another resident or an attending. This is a diagnosis that is much more effectively treated within a continuous relationship. Your relationship with her will help you to improve her headaches. Set some realistic treatment goals with the patient; you should be able to make her headaches less frequent and less severe. You should be able to improve this patient’s lifestyle. I have seen patients come back very grateful that I’ve helped to improve their lives. This doesn’t have to be a major burden for you; it can actually be fun.

REFERENCES


Alec Chessman, MD, Medical University of South Carolina, Editor
organize, and share important health care information. Google Health links to Caring Connections so users may download a free, state-specific AD and store the scanned documents securely in their PHR. This should help overcome a common barrier in emergency health care situations—finding the AD when it is most needed.

It is relatively easy to store an AD in Google Health and make it available to loved ones and caregivers.

- **Create** a Google Health account at www.google.com/health.
- **Download** and **print** the AD form for your state at www.caringinfo.org/googlehealth.
- Complete the form, **sign** it, and have witnessed or notarized (as your state requires).
- **Scan** the signed document and upload it to your Google Health account. While not every patient may have access to a scanner in their home, there are many public scanners available at a low cost.
- **Share** your profile with loved ones and caregivers so they may have access to this document at the time of need.

It is easy to share your Google Health profile with your doctor, your family, or anyone you like by entering the e-mail address(es) of the person or people with whom you wish to share your profile. An e-mail with sharing instructions will be sent automatically to those persons. Sharing your profile lets others see your care wishes available to those who may need them in a time of crisis. If you or your patient is taken to the ER in an emergency, the AD can be viewed and printed by all those who have access to the Google Health profile. This is why it is so important to share the profile. While the ER doctor is not likely to have access, it is better to have a spouse or family physician with online access than to have a printed copy in the files of the person in their home with no one there to find it. This does not replace the benefit of having an AD scanned into an EMR or having a paper copy filed in a paper chart or hospital record; it merely augments access in a time of immediate need.

We recently downloaded the AD packet for Texas and received a 26-page PDF document with the following components:

- Your Advance Care Planning Packet
- Using these materials
- Summary of the HIPAA Privacy Rule
- Introduction to Texas Advance Directive
- Instructions for Completing Texas Medical Power of Attorney
- Instructions for Completing Texas directive
- Texas Medical Power of Attorney
- Texas Directive to Physicians and Family or Surrogates
- You Have Filled Out Your Advance Directive, Now What?
- Glossary
- Legal and End-of-Life Care Resources Pertaining to Health Care Advance Directives

Fortunately, Caring Connections tracks and monitors all state and federal legislation and significant court cases related to end-of-life care to ensure that their advance directives are up to date. Some but not all states have laws authorizing non-hospital do-not-resuscitate orders. Caring Connections does not distribute these forms, so other sources for these forms must be found on a state by state basis.

We have been at the forefront of the online advance directive. In Nevada, Craig Klugman, PhD, helped to create an AD Web site for that state (www.nvlivingwill.com). Teaming together, we were able to create a similar site for Texas (http://texaslivingwill.org). Texaslivingwill.org is supported by the Center for Medical Humanities and Ethics at University of Texas Health Science Center at San Antonio and was funded by an AT&T grant.

Texaslivingwill.org has a number of features that make it more powerful than Caring Connections for those that live in Texas. The site guides the user to complete the AD online by typing into the spaces provided. In addition to including the Directive to the Physician and the Medical Power of Attorney, this site includes two more documents in English and Spanish that are part of an AD in Texas. These are the Out-of-Hospital “Do Not Resuscitate” Order and a Directive for Mental Health Treatment. Most importantly, it has a full Spanish language mirror site with all the AD forms, directions, and information provided in Spanish.

The Nevada site has much of the same functionality as the Texas Web site and allows for advance care planning in Spanish and Filipino. Nevada allows persons to register their signed living will with a state-funded online directory through the Secretary of State’s office. If you live in one of the other 48 states, just perform a Google search on “living will” or “advance directive” along with your state’s name to see if there is something specific for your location.

Wherever we may live and teach, if we all get on board to increase the use of ADs that are more easily accessible, we can improve care at the end of life for many individuals and families. We have just completed our ADs and scanned them to Google Health. We encourage you to do yours soon so you may advocate for your patients and students to do theirs.

**Richard Usatine, MD, University of Texas Health Science Center at San Antonio, Editor**

**Thomas Agresta, MD, University of Connecticut, Coeditor**
As a family physician with a CAQ in sports medicine, I am often consulted regarding knee pain and specifically osteoarthritis (OA). It seems that patients often get frustrated when undergoing evaluation and treatment for this common problem. It is well documented that we as educators do a poor job at teaching medical students and residents about musculoskeletal problems, thus the release of this new Guideline Synthesis should be a welcome addition to the treatment algorithm for OA.

This newly formatted Guideline Synthesis compares the American Academy of Orthopaedic Surgeons (AAOS)^1^ non-surgical guideline and the Singapore Ministry of Health (SMOH)^2^ knee osteoarthritis guideline. The guidelines are compared, and areas of agreement and disagreement are outlined. Recommended treatments and the level of evidence associated with each are presented in table format as well. The addition of a stepwise treatment recommendation would make the guideline easier to read.

One of the hardest things for patients to do, but one of the recommended interventions with good evidence (Grade A), is counseling on weight loss. A minimum of 5% weight loss through dietary modification and exercise is recommended. The SMOH guideline also specifically recommends aquatherapy, which has been shown to be beneficial in multiple high-quality studies.

Regarding medications for pain management, both guidelines recommend use of acetaminophen and/or nonsteroidal anti-inflammatory (NSAIDs) medications (both Grade B evidence). The data on glucosamine and/or chondroitin has varied over time and is only recommended by the AAOS with failure of other oral medications. Topical NSAIDs are also recommended by both guidelines, and SMOH recommends the use of capsaicin.

Regarding intra-articular injections, both groups recommend corticosteroid injections, though the SMOH only recommends them after failure of other therapies. Hyaluronic acid injections are recommended after failure of other therapies by the SMOH and not recommended for or against by the AAOS.

Finally, there is strong (Grade A) evidence against arthroscopic debridement or lavage for symptomatic knee pain when OA is the primary diagnosis. Partial meniscectomy or removal of loose bodies on the other hand may be beneficial when there are symptoms of locking or catching directly related to the meniscal tear or lose bodies. Tibial osteotomy with realignment may be performed to delay total joint replacement in patients with unicompartmental OA. In my experience this is often beneficial in younger patients that have had a meniscectomy at a young age.

A stepwise approach should be undertaken when OA is suspected. In any patient age 40 or above, weight-bearing x-rays are mandatory to evaluate the true joint space narrowing. Also a patellar view (merchant view) should be obtained to evaluate for patellofemoral OA. Treatment should begin with oral analgesics, either acetaminophen or an NSAID depending on the other medical problems and risk factors present in the patient. All patients should be instructed to remain as active as tolerated but avoid high-impact activities. Formal physical therapy or a home exercise program should also be prescribed to increase lower extremity strength and balance.

Treatment failures may then proceed to corticosteroid or hyaluronic acid injections. Most insurance companies require failure of corticosteroid injections to pay for the much more costly hyaluronic acid injections. Depending on the number of compartments involved, unloader braces or heel wedges may be useful. There is little downside (other than cost) to glucosamine and I will often have patients give it a try. Weight loss is appropriate with an elevated BMI as well.

Referral to a primary care sports medicine physician or orthopedic surgeon is appropriate if you feel you are unable to adequately control the patient’s pain or when they have failed all nonsurgical options.

**References**


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Eighteen (90%) of the 20 patients with vitiligo were evaluated every 2 weeks.

characteristics of pigment, time of repigmentation (relative risk=4.70, 95% confidence interval [CI]=2.4–166, NNT=3.7). Treatment with methoxsalen plus sunlight had a much higher rate of adverse effects, such as nausea, phototoxic reactions, and pruritus, than trioxsalen plus sunlight. Two small case series suggest that broadband or narrowband UVB hold promise.2

No trials evaluating micropigmentation, melanocyte transplantation, depigmentation, or cosmetic camouflage could be found.

Evidence-based Answer

Class III topical corticosteroids are effective for localized vitiligo in adults and children. Optimum treatment of generalized vitiligo is less clear. Topical steroids are effective, but their long-term use is limited by adverse effects. Oral methoxsalen, oral trioxsalen, and oral psoralen (all plus sunlight) are effective but also limited by adverse effects. (SOR A, based on two meta-analyses). Tacrolimus is an effective alternative for children with localized vitiligo (SOR B, based on a single randomized controlled trial [RCT]), but concerns persist about its long-term safety.

Evidence-based Summary

For localized vitiligo, two meta-analyses1,2 have shown good evidence for class III steroid use. In 10 RCTs with 993 patients, class III topical corticosteroids were associated with significantly more repigmentation than placebo (odds ratio [OR] for >75% repigmentation 14.32; 95% confidence interval [CI], 2.45–83.72).2 Atrophy was reported in 2% of patients.

One RCT evaluated tacrolimus in children with localized vitiligo. Twenty children were treated twice daily for 2 months with clobetasol propionate 0.05% to one lesion and tacrolimus 0.1% to a similar lesion in a blinded fashion. Characteristics of pigment, time of response, symptoms, telangiectasias, and atrophy were evaluated every 2 weeks. Eighteen (90%) of the 20 patients experienced some repigmentation. The mean percentage of repigmentation was 49.3% for clobetasol and 41.3% for tacrolimus (P=.005). Lesions treated with clobetasol showed telangiectasias and atrophy, whereas tacrolimus was found to be associated with mild itching and a burning sensation.3 Notably, FDA concerns about long-term safety have resulted in a “black box” warning about a potential carcinogenic effect and recommending against long-term use.4

Two recent meta-analyses have evaluated treatments for generalized vitiligo. The most recent meta-analysis included 19 trials and 1,350 participants. Unfortunately, none of the trials had similar enough interventions to allow data pooling. Most were relatively small, of short duration, and did not adequately describe adverse effects. Most of the trials were placebo-controlled studies. In one of the few comparative RCTs, 50 children were randomly assigned to clobetasol propionate or topical PUVAsol.5 The trial was continued for 6 months. Overall, clobetasol was significantly better than PUVAsol at achieving 75% repigmentation (relative risk=4.70, 95% CI=1.14–19.39).4 An earlier meta-analysis showed several interventions to be effective (>75% repigmentation) compared with placebo: oral methoxsalen plus sunlight (OR=23, 95% CI=1.3–409, number needed to treat [NNT]=3.3), oral trioxsalen plus sunlight (OR=3.7, 95% CI=1.2–11.3, NNT=5.4), and oral psoralen plus sunlight (OR=20, 95% CI=2.4–166, NNT=3.7). Treatment with methoxsalen plus sunlight had a much higher rate of adverse effects, such as nausea, phototoxic reactions, and pruritus, than trioxsalen plus sunlight. Two small case series suggest that broadband or narrowband UVB hold promise.2

No trials evaluating micropigmentation, melanocyte transplantation, depigmentation, or cosmetic camouflage could be found.

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3. Lepe V, Moncada B, Castanedo-Cazares JP, Torres-Alvarez MB, Ortiz CA, Torres-Rubalcava AB. A double-blind randomized trial of 0.1% tacrolimus versus 0.05% clobetasol for the treatment of childhood vitiligo. Arch Dermatol 2003;139:581–5. [LOE 1b]

SOR—strength of recommendation

LOE—level of evidence

Jon O. Neher, MD, University of Washington, Editor

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POEMs for the Teaching Physician

Ultrasound, Followed by CT If Negative, Best for Acute Abdomen

Clinical Question: In patients with nontraumatic acute abdominal pain, what is the best strategy for detecting urgent conditions?

Setting: Emergency department

Study Design: Cohort (prospective)

Funding: Government

Synopsis: These investigators enrolled 1,021 patients with nontraumatic abdominal pain lasting 2 hours to 5 days who presented to one of six university emergency departments in The Netherlands. Pregnant women and patients in hemorrhagic shock or with a ruptured aortic aneurysm were excluded. The final diagnosis of an urgent condition—acute appendicitis, diverticulitis, bowel obstruction, and so forth—was present in 65% of the patients. After giving medical histories and undergoing physical examinations and laboratory studies, all patients received upright and supine abdominal plain x-rays, abdominal ultrasound, and computed tomography (CT). Interpretations of the ultrasound and CT were performed with a knowledge of the clinical information but without knowing the results of either of these tests (ie, physicians reading the CT were unaware of ultrasonic shock and vice versa). The gold standard used in this study was interpretation by an expert panel 6 months following presentation using follow-up data collected over that period. Sensitivity—the ability to identify an urgent condition so as to rule it out if it is not present—was high with clinical diagnosis (88%) and was not dramatically improved with plain radiographs (88%) or CT (89%) and was worsened, because of many false-positives, with ultrasound (70%). Specificity, the percentage of true-negatives, was low with clinical diagnosis (41%) and not improved with radiographs (43%) or ultrasound (70%). Combining these results, the best strategy for ruling out urgent conditions (highest sensitivity) is to perform an ultrasound in all patients and perform a CT if the ultrasound is negative or inconclusive (94%); this approach decreases CT use by almost half and is more effective than going straight to CT.

Bottom Line: Urgent conditions—acute appendicitis, bowel obstruction, and so forth—in patients with acute abdominal pain presenting to an emergency department are best ruled out by clinical examination and ultrasound of all patients, followed by CT of those whose ultrasound is negative or inconclusive. Using this approach, 94% of urgent conditions will be correctly ruled out if the CT is negative, and it will avoid unnecessary cost and radiation in almost half the patients presenting with acute abdominal pain. Going straight to CT actually results in a lower sensitivity (89%). (LOE=1c)


Mammography Identifies Many Women Who Will Not Benefit From Treatment

Clinical Question: How frequently is breast cancer overdiagnosed; that is, how often do we detect disease that will not cause death or symptoms?

Setting: Various (meta-analysis)

Funding: Self-funded or unfunded

Synopsis: Just as older men are found to have prostate cancer on autopsy, approximately one third of women between the ages of 40 years and 54 years who die from other causes will have breast cancer found on autopsy (Br J Cancer 1987;56:814-9). To assess the degree, if any, to which this overdiagnosis occurs in clinical practice, these authors identified all research of breast cancer incidence before and after the introduction of mammography screening. The results were extracted independently by two authors and compared. From the “before screening” incidence data, the researchers calculated the expected cancer rates in screened and unscreened women after screening began, which they then used to compare to actual incidence rates. Approximately one in three women were overdiagnosed (overdiagnosis rate=52%; 95% CI, 46%-58%). Even when carcinoma in situ is excluded, the rate of overdiagnosis is 35%. Data were compiled from six countries that have national screening programs and the before-after data needed for this analysis. The United States does not have a national program and was not included in the analysis. These numbers translate as follows: For every 1,000 women older than 50 years who are screened for breast cancer annually for 10 years: one woman will avoid dying from breast cancer, two to 10 women will be overdiagnosed and treated needlessly, 10 to 15 women will be told they have breast cancer earlier than they would otherwise have been told but this will not affect their prognosis, 100 to 500 women will have at least one “false alarm” (approximately half these women will undergo a biopsy). (Source: Welch HG. Overdiagnosis and mammography screening. BMJ 2009;339:b1425.)

Bottom Line: The concept of overdiagnosis is not just limited to prostate cancer in men. It also occurs when breast cancer is detected by mammography in a woman who would otherwise
have lived her life never knowing that she had breast cancer. Overdiagnosis is not the same as a false-positive result. Instead, patients are correctly told they have breast cancer and are subsequently treated. However, had they never been tested, they would have lived the rest of their lives unaware that they ever had breast cancer. In countries with a national program of breast cancer screening, approximately one in three women will be diagnosed with breast cancer that, had they not been screened, would not have affected them. See the synopsis for more statistics (LOE = 2a).


LOE—level of evidence. This is on a scale of 1a (best) to 5 (worst). 1b for an article about treatment is a well-designed randomized controlled trial with a narrow confidence interval.

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