

Virtual Mentor

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Clinical case

Diagnostic testing for diseases in the news

Commentary by Vidya Sharma, MBBS, MPH, and M. Denise Dowd, MD, MPH

Dr. Carpenter entered the exam room to see her next patient, Andrew, and his mother. Andrew was an 8-year-old-boy who was athletic and active. His mother was a bit of a worrier and frequently brought him to Dr. Carpenter for (generally) minor reasons.

During this visit, Andrew's mother pointed out a small rash on his right calf that had appeared the day before. Mrs. Wood said she was extremely concerned about the rash because of news reports of a flesh-eating bacteria spreading throughout the community. She believed the report mentioned that someone in Andrew's soccer league had come down with the infection.

Dr. Carpenter began her examination by asking Andrew about the rash. He said it was a little itchy, but not painful. He said he had not felt sick, and his mother reported that Andrew had not had a fever. During her examination, Dr. Carpenter noted no swelling, bleeding, pus or visibly dead tissue. She then explained to Andrew's mother that he had no symptoms consistent with the flesh-eating bacteria. But Mrs. Wood did not seem convinced, and she repeatedly emphasized that her son might have been exposed to the infection during soccer. She wanted more elaborate tests done, not satisfied with watching and waiting.

Realizing that this mother's anxiety could not be allayed, Dr. Carpenter debated about how to proceed. A proper diagnostic test for necrotizing fasciitis would require a biopsy, gram stain and culture. This procedure would require a lot of time and resources and seemed unnecessary in the absence of any typical symptoms. Dr. Carpenter also considered doing a rapid group A streptococcal test, which involves a simple throat swab that when placed on a reaction strip would give a positive or negative result. Although group A streptococcus causes necrotizing fasciitis, Dr. Carpenter was aware that there really were no recommendations for performing the rapid test for the suspected flesh-eating bacteria infection in Andrew's case.

Dr. Carpenter considered going through the full battery of tests to put Mrs. Wood's mind at rest.

Commentary

Dr. Carpenter is correct: there are no recommendations for doing a rapid throat swab test for necrotizing fasciitis (NF). Diagnostic testing for NF must be guided by the

history and physical examination; there is no reliable screening test to rule out the disease. Other diagnostic tests may include invasive and noninvasive diagnostics such as ultrasonography, CT scan, MRI, tissue oxygen saturation monitoring or biopsy [1-5], none of which is indicated in this case.

Honoring parental requests and preferences for testing

Despite there being no medical indication of disease on physical examination, should Dr. Carpenter order further tests to appease her patient's mother? Patient involvement in medical decision making has dramatically changed in the past three decades, and respect for patient autonomy and patient preferences is now emphasized. A model of "enhanced" autonomy that respects the physician's professional opinion while encouraging patient involvement (but not patient control) is beginning to be favored [6]. Such an approach does not compel physicians to abdicate their professional responsibilities or clinical judgment [7]. Rather, physicians have an obligation to guide patients based on scientific evidence, clinical knowledge and experience. While patient preferences must be respected, physicians should balance them with the medical indications, costs, risks and benefits, and then act in a way that is in accord with their patients' interests and their own professional obligations.

Dr. Carpenter must first consider the potential for benefit versus possible harm that additional tests can cause. Getting a biopsy is invasive; it can cause pain, bleeding and scarring, and there is a low to nonexistent likelihood of benefit; other diagnostic tests can expose a patient to radiation and discomfort and can be very expensive without providing a definitive diagnosis. To be consistent with the principle of beneficence, Dr. Carpenter must inform Andrew's mother that further testing is not necessary and that she is not comfortable ordering any tests.

Impact of the media on health services utilization

Popular media may influence physicians and patients in many ways [8]. In our case, a mother has heard about a condition on television, fears her son has that condition and seeks care for him. The impact of the media on the use of health services has been measured, and both increases [9] and decreases [10] in demand for services have been documented. Some authors have concluded that media coverage induces "an epidemic of anxiety," [11] resulting in decisions to alter the standard of care and producing a surge in diagnostic testing [9]. The accuracy of health-related stories in the media has been questioned by investigators who have reported widespread incomplete or inaccurate information [12, 13].

Ethics of overusing health care resources

The overuse of health care resources is a rampant and well-recognized problem. One reason for this problem is physicians' concern about satisfying patient expectations. Other physician-related factors include fear of lawsuits, uncertainty and "standard of care" practices not based on evidence. While increased health care costs are an obvious negative side effect of unnecessary testing, a more direct implication—one of even greater concern—is the untoward physical and emotional consequences of

these tests on the patient. From a population perspective, overuse of resources (of which unnecessary testing is one example) can be considered less than ethical. The American College of Physicians Charter on Medical Professionalism explicitly states that

appropriate allocation of resources requires scrupulous avoidance of superfluous tests and procedures. The provision of unnecessary services not only exposes patients to avoidable harm and expense but also diminishes the resources available for others [14].

In short, performing tests that are not clinically indicated is unprofessional behavior.

Conclusion

The decision to pursue diagnostic testing should be based on evidence and assessment of the costs and benefits of the procedure. Obtaining a diagnostic test solely to allay patient anxiety with a negligible likelihood of medical benefit is not an ethically defensible practice from either individual or societal perspectives. The individual patient may suffer physical and emotional harms that outweigh any real or perceived benefit, and limited community resources will be inappropriately spent. The popular media is clearly a strong influence and source of knowledge for our patients. Harnessing the power of media through collaborative relationships with television, radio and print media outlets allows physicians to educate the public about health matters and lets the media serve as a primary outlet for information. As the source of expertise, however, the medical community has a responsibility to provide complete and accurate information in a timely manner.

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