Takayasu's Arteritis is No Iceberg

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In their paper, "Takayasu's arteritis identified by CT: revealing the submerged portion of the iceberg?" in this issue [1], Zlatkin and colleagues raise important questions of medical education and medical scientific reporting. The authors should be congratulated on the timely presentation of this relatively rare form of vasculitis. Emphasizing the difficulty of diagnosis in the early stages of the disease, and the usefulness of less invasive imaging modalities like CT, MRI and CT angiography in making the diagnosis, is an important message. Moreover, the observation that epigastric pain can be the result of active aortitis clearly needs further collaboration, but, if true, will enhance our ability to reach an early diagnosis of TA.

However, it is unfortunate that the authors elected to use these three case reports as a basis for unsubstantiated and far-reaching conclusions. One such conclusion reads: "..The expanding use of CT and MRI may reveal missed cases… ." This is a provocative but not very accurate statement. CT and MRI are already extensively employed in our country and it is hard to imagine a vast increase in their use. Since no cases of missed diagnosis of TA found on CT or MRI have been reported over the last few years, this conclusion does not hold. Furthermore, in the early stages when the clinical presentation of TA is nonspecific, CT can really help in making the diagnosis, but those are not "missed cases." The attending physician has to think about the diagnosis and specifically order the CT. Since the clinical findings are quite prominent once the disease progresses, missed cases surely suggest doubtful clinical skills. In those cases, using CT as a safety net instead of improving clinical skills is a turn in the wrong direction with regard to cost containment and a big step away from good medical practice. The authors used CT angiography in two of the cases and not routine CT. These tests are not one and the same. The former is probably the method of choice for diagnosing TA. This is an invasive test, and not very readily available. It is, most definitely, not an examination to be looked upon as a compensatory mechanism for poor history taking or inadequately performed physical examination.

The second conclusion of the authors is even more provocative. "…The true incidence of TA may be much higher than reported in Israel, particularly among Arabs… ." This conclusion is based on the fact that three cases of TA were diagnosed with the help of CT and CT angiography over a 3 year period in their hospital.

These bold claims appear to be based on two major assumptions: the first is that CT determined the diagnosis where clinical skills failed, and the second is that the entire population of eastern Jerusalem receives its medical care at the Mount Scopus hospital. The author's description of the first patient refutes the first assumption, since this case was diagnosed on clinical grounds as suspected abdominal vasculopathy. The CT confirmed the diagnosis. The fact that the more specific diagnosis of TA was not mentioned is irrelevant. In an 18-year-old girl very few disease entities can be grouped under the title "abdominal vasculopathy," and TA is certainly included in this limited list. The CT was ordered with very good indication and simply confirmed the working hypothesis. In the second patient, the cardiologist correctly diagnosed TA on the basis of the physical examination. This diagnosis was confirmed by angio-CT. Regular CT was not even performed and therefore could hardly discover an unsuspected disease. In case #3 the CT examination indeed revealed the true nature of the disease, but one cannot help wondering how an abdominal bruit and the typical history of abdominal angina, found *after* the CT was performed, were not detected earlier. A single case in which a patently inadequate clinical examination made the CT the savior of the day is indeed a very shaky foundation for the authors' first assumption.

Neither does the second assumption seem based on the presented data, despite the fact that the data are easily obtainable. There is no question that other hospitals in the Jerusalem area provide medical care to a large segment of the Arab population, so I dispute the conclusion based on this assumption, as well as the title of the paper.

In my opinion, the clinical data presented in this article carry three very important messages. The first is that TA is not that rare and in young patients should be included in the differential diagnosis of general malaise, arthralgia, elevated erythrocyte sedimentation rate, etc. The second is that CT and specifically CT angiography is the least invasive and most accurate tool for diagnosing TA. It should be carried out before, or even replace, formal angiography. And thirdly, sound clinical performance is still the key to correct

TA = Takayasu's arteritis

diagnosis. We should repeat this message *ad nauseum* to our students, residents, fellow specialists, no less to ourselves. It is regrettable that the authors were not satisfied with the important observation they made and instead tried to expand the conclusions at the price of imprecise presentation of their own data with little scientific support.

References

1. Zlatkin S, Aamar S, Specter G, Leibowitz D, Simanovsky N. Yeshurun D, Heyman SN. Takayasu's arteritis identified by computerized tomography: revealing the submerged portion of the iceberg? *IMAJ* 1999;1:245–249.

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pressure — the cornerstone of the concept of hypotensive resuscitation — cannot be performed in the military prehospital arena. Finally, frequent reassessment of the patient, another demand that must be met, is difficult to perform on the battlefield.

The data in the Medical Corps' database regarding the treatment of 84 consecutive soldiers injured in South Lebanon during a two year period were recently analyzed. This group consisted of moderately and severely injured soldiers (Injury Severity Score 9–14, and ≥16, respectively). Mean evacuation time of all casualties was 103 minutes. Evacuation time was not significantly different between the two groups, implying that evacuation time did not depend on severity of injury but rather on tactical considerations. Evacuation time did not influence core body temperature or prothrombin time measured upon arrival at the hospital. The patients received a mean of 2.5±1.5 liters of fluids prior to hospital arrival, independent of severity of injury. Only a minority of patients received blood transfusion before arriving at the hospital. There was no correlation between the amount of fluids given to the patients and core body temperature or prothrombin time measured at the emergency department upon arrival. The difference in mean core body temperature of patients injured during summer and winter seasons (36.7 and 36.2C, respectively) was not statistically significant. Mean core body temperature of moderately and severely injured patients (36.8 and 35.8C, respectively) was found to be statistically different. To summarize, the time of evacuation and the amount of fluid given to casualties in a low intensity conflict situation, as in South Lebanon, appeared to have no effect on their core body temperature and coagulation factors as measured upon hospital arrival. Core body temperature was affected by the severity of injury.

It should be noted that physicians treating combat casualties in the IDF come from various backgrounds. Some are general physicians recently graduated from medical school, while others are experts in a variety of medical disciplines. The Medical Corps' guidelines, therefore, must be clear and not trauma-expert oriented. Using the term "½C," as suggested by Krausz [4], could create misunderstandings. This term emphasizes the control of external hemorrhage, while it underestimates the importance of hemodynamic assessment and fluid administration. It may lead medics and physicians to believe that giving fluids to casualties is detrimental. We have shown that the amount of fluids given to casualties in South Lebanon, at evacuation times of 1–2 hours, did not cause the side effects described in the literature on massive fluid infusion [5].

Evacuation time of less than 30 minutes is infrequent in the military setting. It can be achieved in units situated close to medical facilities, resembling urban trauma situations, and in such circumstances patients should be treated according to the "Scoop and run" philosophy. But it is almost impossible to evacuate a wounded soldier from South Lebanon in less than an hour.

Since "hypotensive resuscitation" in the military prehospital setting is not feasible and "maximal fluid resuscitation" potentially harmful, we propose the strategy of "smart fluid resuscitation." This means that while arrangements for evacuation are being made, the patient should have at least one IV line, and fluid administration should start as soon as possible. Ground or air evacuation should not be delayed for an IV line, which can be done en route. Additional fluids, after a primary bolus, should be given according to the patient's response. It is our contention that these simple guidelines can bridge the gap between theory learned from experimental studies and reality. This protocol is thus applicable to low intensity conflicts.

References

1. Shock. In: American College of Surgeons Committee on Trauma. Advanced Trauma Life Support (ATLS) for Doctors, Chicago: American College of Surgeons, 1997:87–107.
2. Bickel WH, Wall MR Jr, Pepe PE, Virgilio RW, Ginger WF, Allen MK, Mattox KL. Immediate versus delayed fluid resuscitation for hypotensive patients with penetrating torso injuries. *N Engl J Med* 1994;331:1105–9.
3. Shoemaker WC, Peitzman AB, Bellamy R, Bellomo R, Bruttig SP, Capone A, Dubick M, Kramer GC, McKenzie JE, Pepe PE, Safar P, Schlichtig R, Severinghaus JW, Tisherman SA, Wiklund L. Resuscitation from severe hemorrhage. *Crit Care Med* 1996;24(Suppl):S12–23.
4. Krausz M. Military fluid resuscitation. *IMAJ* 1999;1:292–4.
5. Cosgriff N, Moore EE, Savain A, Kenny-Moynihan M, Burch JM, Galloway B. Predicting life-threatening coagulopathy in the massively transferred trauma patient: hypothermia and acidosis revisited. *J Trauma* 1997;42:857–62.

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Government is not reason. Government is not eloquence. It is force. And, like fire, it is a dangerous servant and a fearful master.

George Washington