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EDITORIAL COMMENT

Iatrogenic

Time to Retire the Word*

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Since 1970 there have been 7,100 publications with the word "iatrogenic" in various medical publication titles. These were cited 57,160 times (**Figure 1**). The dictionary defines it as an event "induced inadvertently by a physician or surgeon or by medical treatment or diagnostic procedures." Like so many words in medicine, its origin is from ancient Greek: ἰατρός = doctor + γένεσις = origin. (On a personal note, I do have to admit, my classical education does come in handy from time to time.)

In this issue of *JACC: Case Reports,* Shammas and Karia (1) report a case of an "iatrogenic" intramural hematoma of the left internal mammary artery that occurred during diagnostic angiography. The hematoma was likely caused by the catheter tip. Stent placement resolved the symptoms and re-established flow. The patient did well.

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The word "iatrogenic" is used so widely that few of us stop and think how challenging its meaning really is.

First of all, it implies that whatever the event was, it was caused by a physician. In today's world, medical care is delivered by complex teams of health care professionals, and I can easily come up with many examples of "iatrogenic" events that were caused by a nonphysician—wrong drug dispensed by a pharmacist and administered by a nurse or stent dislodgement in the coronary artery due to a faulty catheter design. The second example actually goes beyond the health care team and includes device manufacturers, pharmaceutical companies, or even physical hospital structures. Clearly, the word fails us here. The word "iatrogenic" does not encompass the whole scope of who or what caused the event. Perhaps, in a simpler world of yesteryear, one could shift all the blame on the physician (2). The case of the intramural hematoma distinctly shows the complexity of attributing the cause of the hematoma to the physician only (1). It is just as plausible that it was the catheter design or perhaps an unrecognized flaw in production of a particular catheter batch that contributed to the left internal mammary artery hematoma.

Another question with the meaning of "iatrogenic" is whether there was indeed harm to the patient. It is generally assumed that "iatrogenic" is associated with some harm—Stevens-Johnson syndrome after drug administration. Yet, as every interventional cardiologist knows, distal vessel dissection after stent placement is a known and relatively common complication almost invariably addressed by placing an additional stent. The ostial left internal mammary artery hematoma described here is an excellent example of an expected and known procedure-associated complication. With the contemporary equipment and imaging modalities, it is exceptionally rare that patients suffer any harm. Shammas and Karia (1) clearly show that quick thinking and appropriate use of intravascular ultrasound resolved this procedure-associated complication. This ambiguity that is present in the word "iatrogenic" is quite significant. "Iatrogenic" may or may not mean harm to the patient. This is another reason we should either retire the word or attempt to change its meaning to more precise and better-defined terms.

What else is implied in the meaning of "iatrogenic"? It almost always signifies an event due to commission and hardly ever is used by event of omission. This is an important shortcoming of the word. Medical misadventures occur both by commission and omission, yet the way we use of word does not include both. A patient's death from cancer

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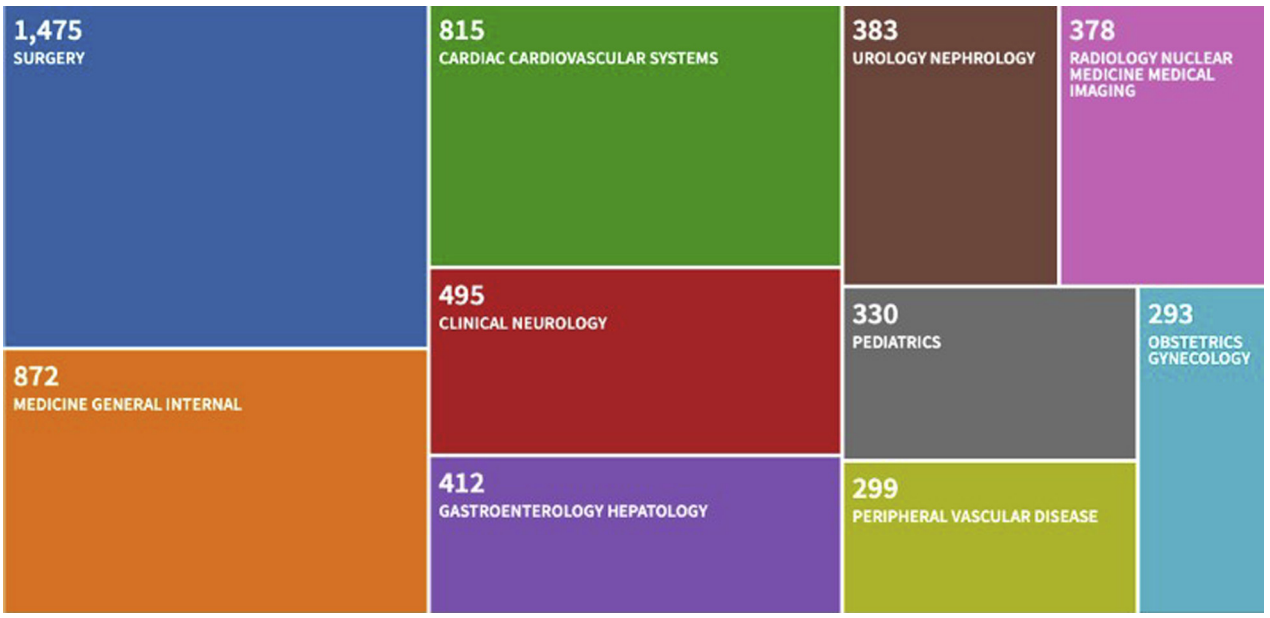
FIGURE 1 Web of Science Search



Results of a search performed June 26, 2019, on Web of Science.

because a chest x-ray was not ordered will generally not be referred to as "iatrogenic," although this clear error of omission originated with the physician. Had Shammas and Karia (1) not performed angiography, the hematoma would have not occurred at the significant risk of missing a potentially important diagnosis.

"Iatrogenic" is frequently used interchangeably with the word "complication," the word "error," and with the term "adverse event." This all seems quite chaotic and probably requires some linguistic intervention. What could one do with such a messy word? My opinion is that we should either retire or repurpose it.

Repurposing words is not easy. Words do change meaning over time, either by natural evolution of the language or by active intervention. To repurpose the word "iatrogenic," the medical community would have to agree on its meaning. As used today, "iatrogenic" is simply too vague and confuses almost everyone (3).

Another approach—which I propose—is to retire it altogether. Eskimos have many more words for snow than English does. We have many better words (e.g., "complication," "medical error," "adverse event," "medical harm," "near miss") (4) that are more accurate and convey the meaning in more precise and unequivocal fashion than "iatrogenic" does. For this excellent and highly educational case by Shammas and Karia (1) in this issue of *JACC: Case Reports,* I would strongly consider using the term "procedure-associated."

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