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Warning: Side Effects May Include a Decrease in Invasive Procedures

H.J. Cloft

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tially despised by Captain Haddock. She is often foolish and absentminded (Alzheimer disease) repetitively singing the “Jewel Song” from Gounod’s *Faust*. Is this a form a palilalia? “Palilalia” is the immediate repetition of one’s own words. In younger children, it is probably normal and forms part of the learning process. La Castafiore probably does not have palilalia as patients affected by it commonly stutter, something she does not. Despite being an opera diva, she suffers from abnormal phonemic awareness and is unable to distinguish words that rhyme (the jokes related to rhyming—originally written in French—lose much of their bite when translated). Of the lesser characters, Nelson the butler is perhaps the one who shows up most. He does not show any physical or psychological abnormalities, but maybe we do not get to know him well enough to detect any abnormality.

Socially, Hergé committed some faux pas. Take his *Tintin in the Congo* (*Le Petit Vingtième*, 1931), where Africans are portrayed as primitive and the overall attitude of the book is paternalistic. Conceivably, this is just a reflection of the spirit of that time, but it has led to multiple revisions of the book and to it being the last one published in English (it was banned in many countries). Animal cruelty is omnipresent, and stereotyping of individuals (Jews, Native Americans) is also common throughout the series.

Tintin is certainly not the only comic book character to suffer repeated head trauma. A study of traumatic brain injuries has been done in another French-language comic book character: Asterix.⁸ This series was created by Rene Goscinny and started in 1959. Asterix is a Gaul warrior resisting the Roman invasion of Gaul in about 50 BC. More than 700 traumatic brain injuries—mostly to males—occur throughout the 34 books. More than 50% of the injuries are moderate with Glasgow Coma Scale scores of 9–12. Thirteen characters show signs of decerebrate posturing. As expected, it is the Romans who suffered the most head injuries, and the most severe ones happened when helmets were not being used. Despite the large number of injuries, it appears that no character suffered long-term sequelae.

Digging into the psyches of beloved children’s characters may elicit a flurry of complaints and controversies. This is what happened when a group of researchers from Halifax, Nova Scotia attempted to explain the behavior of Winnie the Pooh.⁹ The famous bear is now believed to have attention deficit/hyperactivity disorder (ADHD) of the inattentive subtype. Comorbidity includes impulsivity, cognitive impairment, and finally obsessive fixation (to honey) which leads to . . . obesity. There are bumps on his head suggesting child (or bear) abuse. These modern neurodevelopmentalists suggest that Pooh needs medication to be fitter and more functional. The other characters do not escape being medically assessed by the authors of the article. Piglet is given a diagnosis of generalized anxiety disorder; Eeyore has a dysthymic disorder; Owl, a reading disorder; and Tigger also has ADHD.

Tintin, Asterix, and Pooh do not go to the doctor in any of the books, but at least in Tintin’s case, doctors appear in the comic books. Dr Muller shows up in 3 books (*The Black Island* Casterman, 1938; *The Land of Black Gold*, Casterman, 1950; and *The Red Sea Sharks*, Casterman, 1958). His background and specialty are never given (I am not even sure that he is a medical doctor). Dr Krollspell appears in only 1 installment

(*Flight 714*, Casterman, 1968) and is the head of a psychiatric clinic. Later he loses his memory when kidnapped by aliens who give him some undefined “treatment.” It is hinted that both of these nefarious characters are ex-Nazis. The last is Dr Patella, who, in accordance with his name, is an osteopath. He appears in 2 books (*Destination Moon*, Casterman, 1953; and *Explorers on the Moon*, Casterman, 1954), where he treats an unconscious Haddock when arriving back to earth.

Should we, and particularly our children, be allowed to read about this bunch of sick characters? Would an older, bearded, libidinous Tintin make more sense? Or, a cowardly Asterix who never fights? Would a leaner more efficient Pooh be a better character? Some think that these characters should go to the doctor; I like them just as they are and prefer not to know what their MR images would show.

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M. Castillo

Editor-in-Chief

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EDITORIAL

Warning: Side Effects May Include a Decrease in Invasive Procedures

Endovascular procedures have certainly been a tremendous advance, allowing the minimally invasive treatment of diseases throughout the body that previously required “major” surgery. I feel fortunate to have been able to practice these techniques during such an exciting time of innovation. However, patients will want us to progress to even less invasive options in the future, and the ultimate in minimally invasive procedures is no procedure at all. The Stent placement and Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis (SAMMPRIS) trial is an example of how the need for an invasive procedure can be obviated by proper medical therapy.¹

Just as our endovascular procedures improve with time,

medical therapies improve as well, as demonstrated by the outcomes for patients randomized to medical therapy in SAMMPRIS being substantially better than patients treated with medical therapy in the Warfarin-Aspirin Symptomatic Intracranial Disease trial² a decade earlier. Similar advances in medical therapy for atherosclerosis might be demonstrated in the near future because it is quite possible that a similar result in favor of medical therapy would be found if a randomized study was performed comparing medical therapy with endarterectomy or stent placement for asymptomatic carotid stenosis.

Of course, we must be cautious not to throw the proverbial baby out with the bathwater. Maybe a randomized study shows an overall negative result for a procedure, but that does not exclude the possibility of a benefit from the procedure for a subgroup of patients. SAMMPRIS may have had negative results for angioplasty and stent placement versus medical therapy overall, but it is entirely possible that some subset or subsets of patients within SAMMPRIS would be better treated with angioplasty and stent placement than with medical therapy. Nonetheless, scientific progress in medicine is almost certainly on an inexorable course of replacing many invasive procedures, including minimally invasive ones, with medications.

Acquired vascular diseases like atherosclerosis may be especially amenable to eventual conquering by medicines that treat them at a molecular level. Imagine that there was a single pill that eliminated unruptured aneurysms? An epidemic of aortic aneurysms in turkeys was once largely eradicated by the administration of the medication reserpine,³ so it is certainly conceivable that a single drug could treat human cerebral aneurysms in the near future. Combine that with successful pharmacologic prevention and/or treatment of atherosclerosis and the demand for endovascular treatment of cerebrovascular diseases would plummet. It is not unreasonable to expect such a major paradigm shift within the course of our careers. Consider that in the time since I graduated from medical school, our understanding of peptic ulcer disease has completely changed and it is now effectively treated with antibiotics. It is generally unwise in medicine to assume that you will be performing the same procedures throughout your career.

Rather, we should consider that it would be extremely disappointing if the treatment of cerebrovascular diseases changed very little in the remaining years of our lives.

Physicians carry their proverbial hammers and thus may unfortunately see their patient's condition as a proverbial nail. We physicians organize ourselves into societies on the basis of common interests, which are sometimes a particular "hammer." The inherent bias of physicians and their organizations is nothing new, but it is worthwhile to occasionally remind ourselves of how that bias impacts our view of the treatment of diseases now and in the future. Such a bias can significantly cloud our ability to imagine, develop, and/or promote a better treatment that is not a neurointervention. I have heard some neurointerventionalists suggest, after hearing the results of the SAMMPRIS trial, that the wrong intervention was performed or it was performed by the wrong people or on the wrong patients. As with any trial, valid criticisms of SAMMPRIS can be made, but the reflexive impulse to look for the reasons why we failed to show that endovascular intervention is the best therapy completely distracts us from the impressive outcomes achieved by medical therapy alone. From a patient's perspective, the improved outcome with medical therapy is good news. We have grown accustomed to expanding applications of endovascular therapies as they have replaced open surgery. However, that era of expansion of endovascular therapies may be reaching a peak, and we probably now need to become accustomed to medical therapies occasionally replacing endovascular therapies.

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H. J. Cloft
Senior Editor

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