



Early Detection of Cancer -The Good, the Bad, and the Ugly

Michael Retsky*

Introduction

I am writing this editorial for two reasons. First permit me to introduce myself to readers of this journal. I was recently appointed Editor in Chief of the Journal of Clinical and Experimental Oncology. While my formal educational background is in experimental physics, I made a career change into cancer research 35 years ago. It has worked out well but I would not necessarily recommend it for everyone.

My work in physics was in electron beam devices. For my PhD thesis at University of Chicago I built a scanning transmission electron microscope that could measure cross sections of individual atoms of Mercury, Uranium and Silver [1]. I also have a US patent for an orbiting anti-ballistic missile defense that uses very energetic electron beams [2]. This is far afield from cancer research but learning how to do good science and especially the ability to calculate transfer well.

It is an honor to serve in such a position and I intend to work hard to continue making the journal a success. My current research colleagues include some very distinguished scientists and clinicians from a variety of fields. At this time I am busy completing editing a book to be published by Nature/Springer on "Perioperative inflammation as a triggering origin of metastasis development". My good friend and colleague Romano Demicheli of Milan, Italy is co-Editor [3].

The second reason for this editorial is that I would like to announce a special issue of Clinical and Experimental Oncology devoted to screening detection of cancer to reduce the morbidity and mortality.

There was a famous spaghetti western movie in 1966 titled "The Good, the Bad and the Ugly" created by Sergio Leone and starring Clint Eastwood, Lee Van Cleef, and Eli Wallach. The story was dramatic, the music was excellent and the title song became famous. I think of that movie on occasion especially when I read a paper on early detection of cancer. Why that happens will become clear.

Anyone who has examined the results of screening for cancer must have been impressed by very significant benefits in certain situations and disturbed by highly questionable benefits in other situations. I want to have this special issue discuss those extreme situations. This would not be a full analysis of all methods to screen for all cancers. Rather I would like to have each paper in this special issue just discuss one or two examples of screening that is good, is bad or is ugly. There is no shortage of examples. I will soon present the first paper to better demonstrate what I mean.

The title of the special issue is "Screening and early detection of cancer; the good, the bad, and the ugly."

Let's think ahead. Where might this discussion lead? Is it just an intellectual exercise or can it lead to clinically useful results. My thought is that in a year or so we will have a number (hopefully large) of papers that discuss where and when early detection of cancer works well and where and when it does not work well. Perhaps this will lead to new ideas or at least properly document problems that need to be solved. Then perhaps some smart young scientists will be motivated to work on solutions to important real problems. There is a major need for such work. I will provide one "good" example of a screening process that when done properly is excellent but when done less than properly is far less valuable. The typical patient does not know if he or she got a good colonoscopy or a less than good colonoscopy. You have to know what question to ask and what acceptable answers are. It is not obvious.

I know colon cancer well from a variety of perspectives. After a routine physical examination (FOBT- fecal occult blood test) in 1994 twice showed positive indications of blood in stool, I had a colonoscopy. I awoke during the last part of the exam and saw this 3 or 4 cm tumor on the video monitor. I had been studying cancer for about ten years and knew exactly what that meant. I did not have to wait for a biopsy. The pathology report concluded I had stage 3c colon cancer. The primary tumor was at the sigmoid area of the colon. Surgery was simple anastomosis and I recovered well that I attribute to being fit. Adjuvant chemotherapy was needed since the probability of relapse was about 80% without such therapy and 50% with conventional therapy.

I opted for a low dose long term protocol using the standby colon cancer drug 5-fluorouracil [4]. I was apparently the first person to use such a non-toxic therapy and it is now called metronomic chemotherapy. The therapy worked well and I am here to talk about it. However one important point is that I had a sigmoidoscopy examination about 2 years prior to eventual detection and they must have missed the cancer since I am quite sure it was large enough to visualize. That dramatically alerted me that early detection of colon cancer is not a perfect science.

I was a founder of the Colon Cancer Alliance and am still on the board. I have been following developments in early detection and in therapy. Colonoscopy works very well if properly done. One of the board members has Lynch syndrome - that produces many polyps. He has a young family and does not want to die of colon cancer as has happened to several persons in his family tree. He gets colonoscopy every 11 months and they commonly find and remove polyps. He uses a very skilled gastroenterologist and he will continue. Based on his example, colon cancer can be prevented with early detection but it has to be done right. This cannot be said about other major killers - breast cancer, lung cancer, and prostate cancer.

From my perspective, colonoscopy if done properly can be used as a method to prevent colon cancer or at least detect it in a relatively curable state that significantly reduces mortality from colon cancer. There is a catch however. Colonoscopy does not have well defined standards of practice compared to mammography [5]. One result

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of this lack of specific standards is that the quality of colonoscopy can vary depending on the skill and diligence of the particular gastroenterologist and supporting assets of personnel and equipment.

According to one large well respected study, adenoma detection rate or ADR can be used as a surrogate measure of overall quality of colonoscopy [6]. ADR refers to how frequently the operator finds at least one adenoma (polyp with malignant potential). The best possible score is 100% and the worst is 0%. The Corley et al paper was very convincing to me that if done well, colonoscopy can make a difference of 2 or 3 fold in reducing the incidence of colon cancer and risk of dying from the disease. The patient merely needs to find out the ADR of his or her GI doc and if it is not high enough to suit you, change doctors until you get a better answer. You are not looking for a friend. You are looking for a competent practitioner. It does not cost anymore and the prep is not worse to use a GI doc with good ADR compared to using a GI doc with a poor score [7].

Why are some GI docs not providing good colonoscopies? How will this problem be solved? Is it poor equipment or lack of some technology? Perhaps we should educate the public and let market forces fix the problem.

Conflicts of Interest

Michael Retsky is on the board of directors of the Colon Cancer Alliance (www.ccalliance.org). No other conflicts to report.

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