A PATIENT'S JOURNEY

Cancer and chemotherapy

Ann V Salvage,[1] Barry Quinn[2]

Ann Salvage found that her journey through colon cancer and chemotherapy was characterised by irony and paradox. This is her story.

[1]London
[2]St George's Hospital, London SW17 0QT
Correspondence to: B Quinn
barry.quinn@stgeorges.nhs.uk

Cite this as: *BMJ* 2009;339:b2875
doi: 10.1136/bmj.b2875

The irony is swiftly dealt with. Out of the blue, just as I was about to start analysing the results of my PhD study of palliative care nurses and their routes into hospice work, I was handed a diagnosis of advanced colon cancer. My interest in my PhD topic had arisen largely from my experience of the deaths from cancer of a higher number of "significant others" in my life than might have been expected for someone of my age (57). Suddenly, having believed that I was the one destined to accompany sick people, I now found that it was I who needed to be accompanied.

A speedy operation to remove the diseased section of my colon left me feeling better than I had for a long time. The anaemia that had alerted my gastroenterologist to the large tumour lurking at the intersection of my small and large bowels had been righted by a preoperative blood transfusion and its growth halted by the operation. Six weeks later, I began a six month course of adjuvant chemotherapy.

The paradox of chemotherapy

The paradox of chemotherapy is the fact, all too clear to most chemo patients, that to make you well it is first necessary to make you ill. Just before beginning my treatment, I attended a local school fete and chatted to an ex-neighbour, who had several friends who had had chemotherapy. "How are you feeling?" she asked. "Fine at the moment," I smiled. She warned me that as I went through the treatment I probably wouldn't continue to feel fine—in fact, I was likely to end up feeling pretty unwell. "Let's hope not," I said, though I'd been told by other people that chemo was not exactly a walk in the park.

My first couple of three week cycles of oxaliplatin and capecitabine were pretty unpleasant. During the first, I developed blisters on my feet that were so painful I couldn't walk for three days. In the second, I had non-stop diarrhoea and had to stop the tablets a few days earlier than planned. At that point, my dosage of capecitabine was significantly reduced, and the symptoms abated to the point where I could get on with my life, at least to some extent. Throughout the process, I've had other troublesome side effects, including a very painful arm after intravenous treatment, peripheral neuropathy, and increasing fatigue.

Are you getting better?

When friends ask whether I am getting better I find it difficult to answer them. I understand that, as the cancer is part of me, extreme reactions by my body should signify extreme reactions by the cancer cells also. But when there have been delays in treatment as a result of side effects or low blood counts, I've been anxious that the unwelcome cells may get a respite from the bombardment and continue to grow. As my friend predicted, I've felt worse as the treatment has continued, to the point where I feel less well than I did after the operation and much worse than I did before it. I fully understand that to give me the best chance of being cancer free it's been necessary to hit my body with drugs that have effects not only on the cancer cells but also on many of my normal cells as well. I hope that developments in drug treatment will eventually improve on this situation where patients have to be made ill in order to end up free of cancer. I was lucky not to lose my hair, and the nausea, which I'd been dreading, hardly affected me at all. Although the steroid drugs that I took to hold the nausea at bay caused severe insomnia, at least I was awake enough to have the night time inspiration to write this article.

Support along the way

On my cancer journey to date, my partner has been a very solid rock to cling to while I have floundered in a sea of uncertainty. The registrar we saw at the beginning of my chemotherapy treatment was wonderful—sympathetic, understanding, happy to spend as much time as we needed to answer our questions, and forthcoming with all the information we needed on the possible side effects of the drugs I was about to take. It was reassuring to know that a close check would be kept on me, with each cycle of treatment

This is one of a series of occasional articles by patients about their experiences that offer lessons to doctors. The *BMJ* welcomes contributions to the series. Please contact Peter Lapsley (plapsley@bmj.com) for guidance

A CLINICIAN'S PERSPECTIVE

Ann's story of moving from one who accompanies to one who needs accompanying gives us an insight into her personal story—one of the many that lie behind every diagnosis of cancer.

Although cancer is often associated with pain, the discomfort and distress that Ann and many others describe may arise from the treatments they have to undergo. Not every course of chemotherapy brings with it the discomfort that Ann describes, but her experience is not unusual. As she indicates, chemotherapy agents do not have the ability to distinguish between cancer and normal cells, and the side effects that Ann notes—the blisters, the diarrhoea, the neuropathy, the increasing fatigue, and the painful arm—all stem from this reality. Through a close working relationship, the oncology team and her general practitioner have an important role to play in reducing and treating these distressing side effects.

It is not unusual for chemotherapy to be delayed until blood counts recover, and yet, for many people like Ann, this can be a worrying time, carrying with it the fear that the break in treatment may give the cancer cells a chance to recover. It takes a knowledgeable and sensitive clinician to be attuned to these concerns and to take the time to give reassurance and support. Although medical treatment has gone a long way in reducing the side effects of anticancer treatments, some toxicity remains. Until we find a treatment that has the ability to target malignant cells (and the newer targeted ones have gone a long way in beginning to do just that), we will continue to balance the benefits of anticancer treatments with the toxicity they bring.

Ann reminds us of her need to be accompanied through her illness and treatment by the support she received from her partner, the healthcare team, and the healing and meditation practices she chooses for herself. As healthcare professionals, we could make ourselves more familiar with such practices in order to guide and support patients who seek the help that may lie beyond the medical model. Unfortunately, Ann's story reminds us that sometimes we do not always get this right, and we may fail to support those we care for.

Cancer continues to be viewed negatively by the public and by some healthcare professionals. Part of this negativity stems from the uncertainty and the change that diagnosis and treatment may bring—and cancer's close association with death. And yet through this personal story of cancer we hear how Ann and others find strength and meaning in the experience. Ann speaks of the positive changes she has made to her life and the goals she hopes to achieve.

The reality is that we who accompany have much to learn from those who ask us to support them through their illnesses. This requires clinical skills and expertise. Equally important, though, is that practitioners should take the time to show they care.

Barry Quinn oncology matron/lead chemotherapy nurse

being contingent on the results of blood tests and the side effects I reported at my clinic appointments every three weeks.

When the registrar moved on to another post, I began to see another doctor, who, while no doubt an excellent clinician, unfortunately lacked the human touch and seemed unable to answer many of our questions (for example, about the statistics on outcomes associated with completion or non-completion of chemotherapy cycles—to us essential information on which to base decisions about whether I should complete the course).

Along the way, I have found Cancerbackup an excellent source of printed information (even at our initial meeting, the registrar gave me details from its website on the drugs I would be taking). I've had spiritual healing, have started meditating regularly, and have begun seeing the counsellor who works with cancer patients at the hospital I attended for my chemotherapy. My clinical nurse specialist was very helpful in the early stages of chemotherapy, advising on what action I should take when the side effects were especially bad; and the nurses on the chemotherapy ward were unfailingly efficient, encouraging, sympathetic, and caring.

USEFUL RESOURCES

Cancerbackup and Macmillan Cancer Support (www.cancerbackup.org.uk, www.macmillan.org.uk)—Practical advice and support for cancer patients, their families, and carers. These two cancer charities have recently merged

Cancer Counselling Trust (www.cancercounselling.org.uk)—Free face to face and telephone counselling in the UK

American Cancer Society (www.cancer.org)—General information on most cancers

Cancer Council Australia (www.cancer.org.au)—General information, including cancer types, primary care resources, factsheets, and research

Institut National du Cancer (www.e-cancer.fr)—Information on cancer, including treatment, prevention, and research (France)

Looking to the future

I started my eighth and final chemotherapy cycle in December 2008, and my partner and I performed a ritual burning of the drug boxes when I took the last tablet. This has not been an easy journey, but I remain confident that I will be able to regain the weight I've lost, get rid of the peripheral neuropathy that is significantly affecting my hands and feet, get back to the physical activities I enjoy so much, and within a few months return to full health and strength, cancer free and able to get on with my life.

I've learnt from the experience that I need to allow some relaxation into my life, which has tended to be a round of "must dos," and listen to my body and treat it with greater respect.

My partner and I are both benefiting from regular meditation and looking forward to a special holiday in a few months' time and to some further travelling once I have completed my PhD. A different way of living offers itself, and my cancer experience has by no means been an entirely negative one.

Competing interests: None declared.

Provenance and peer review: Not commissioned; not externally peer reviewed.

Accepted: 2 March 2009

LESSON OF THE WEEK

A diarrhoeal illness with a *diff*erence?

Juliet Elvy,[1] Terry Riordan,[1] Patrick Sarsfield,[2] Tariq Ahmad[3]

Colitis associated with *C difficile* highlights the need to consider the diagnosis in the absence of typical risk factors

[1]Department of Medical Microbiology, Royal Devon and Exeter Foundation NHS Trust, Exeter EX2 5AD, UK
[2]Department of Histopathology, Royal Devon and Exeter Foundation NHS Trust
[3]Department of Gastroenterology, Royal Devon and Exeter Foundation NHS Trust
Correspondence to: J Elvy
juleselvy@doctors.org.uk

Cite this as: *BMJ* 2009;339:b2648
doi: 10.1136/bmj.b2648

Case report

We describe a case of a 29 year old healthcare worker who presented with a diarrhoeal illness of 3 weeks' duration. This young woman had been passing up to seven loose stools a day with mucus but no blood. Her medical history included symptoms consistent with a diagnosis of irritable bowel syndrome with diarrhoea, but there was no particular family history of gastrointestinal disease. She lived with her partner and 11 year old daughter and worked as a student nurse in an adult mental health unit. She was a former smoker, having stopped five years previously. She had no history of foreign travel or contact with animals.

On examination she was apyrexial, pulse was 88 beats per minute, and blood pressure was 118/82 mm Hg. She was diffusely tender over the lower abdomen but had no signs of peritonism. Blood tests revealed a haemoglobin concentration of 13.5 g/dl, white cell count of 12.1×10^9/l, C reactive protein of 86 mg/l, and normal liver and renal biochemistry. Stool was sampled for microbiological investigation, but was negative for *Campylobacter*, *Salmonella*, *Shigella*, *Escherichia coli* O157, *Cryptosporidium*, and intestinal parasites. In addition, an enzyme immunoassay test for *Clostridium difficile* toxin was negative. Plain abdominal x ray images revealed thickened colonic haustra but no mucosal islands, substantial colonic dilation, or free gas.

The patient was treated conservatively with clear oral fluids and analgesia and underwent flexible sigmoidoscopy on her third day of admission. The colon was examined up to the splenic flexure and an abnormal granular mucosa covered with mucopurulent exudate was seen, extending from the rectum to the proximal descending colon. A biopsy was performed. A tentative diagnosis of inflammatory bowel disease was made and she started taking prednisolone 30 mg once daily plus mesalazine 400 mg every eight hours. However, by day seven her stool frequency continued at seven times per day with ongoing abdominal pain, and her C reactive protein had climbed to 207 mg/l. By this time the histopathology was available; a superficial focally active inflamed mucosa with mild cryptitis and neutrophil infiltration of the lamina propria was seen. Importantly, there were no crypt distortions, granulomas, or any other features to suggest inflammatory bowel disease, and a possible infective cause was suggested. A further stool sample was taken, and surprisingly proved positive for *C difficile* toxin.

A second sample from the following day was requested and also tested positive for *C difficile* toxin. This sample was referred to the Health Protection Agency *Clostridium difficile* Ribotyping Network Reference Laboratory, Leeds, UK, where it was found to be culture positive for *C difficile*. The diagnosis was unexpected given the lack of classic features on endoscopy and histology and the negative initial toxin result. The patient's history was revisited: she had received no antibiotic treatment in the preceding six months but had been working as a student nurse in a variety of healthcare settings. On day nine of admission, she began taking oral metronidazole 400 mg at eight hourly intervals and discontinued prednisolone and mesalazine. By day 12, she was feeling much improved: her diarrhoea and abdominal pain were settling, and she was discharged home. On follow-up at five weeks, her frequency of stool had reduced, and the C reactive protein concentration had normalised to <3 mg/l. Tissue transglutaminase antibodies were tested and were negative. Colonoscopy was performed five months after initial presentation and biopsies of terminal ileum, caecum, transverse colon, and rectum showed no evidence of inflammatory bowel disease. Faecal calprotectin, measured at <20 µg/g (normal range 0-50), was not consistent with gastrointestinal inflammation, and a barium meal with follow through was normal.

Discussion

C difficile is a well known cause of diarrhoea and colitis, the severity of which may range from mild diarrhoea to life threatening fulminant colitis. Asymptomatic intestinal colonisation may also occur, with reported rates ranging from 0% to17.5% in healthy adults.[1-5] In hospital populations, colonisation rates may be considerably higher than this, particularly during outbreaks.

The epidemiology of *C difficile* infection may be evolving. In addition to the increasing number and severity of infections, as demonstrated by hospital epidemics seen across North America and Europe,[6-8] the populations affected may also be changing. Traditionally, infection has occurred mainly in "high risk" patient groups, such as elderly, severely

ill, or hospitalised patients, with a history of previous antibiotic exposure. However, infection has also been reported in patients with no such risk factors.[9-11]

This case of colitis associated with *C difficile* in an otherwise healthy young adult highlights the need for clinicians to consider the diagnosis in the absence of typical risk factors. Our patient was probably exposed while working as a student nurse. Although we do not know if there had been any confirmed direct contact with *C difficile* infection (which would be unlikely in a mental health setting), we do know that she had been working in a variety of healthcare settings including elderly care during her student attachments. Symptomatic *C difficile* infection in healthcare workers has been reported,[12-14] but it is a rare event, compared with over 50 000 cases that occur in England and Wales each year.[15] Alternatively, it is possible that this represents a case of community associated *C difficile* infection, which is being increasingly recognised in patients without the typical risk factors and in particular without antecedent antibiotic use.[10 11]

Since 2004, laboratory reporting of all *C difficile* infections in patients over 65 has been mandatory for all acute NHS trusts in England. This has recently been extended to include all patients over the age of 2, which may increase our understanding of the epidemiology of the disease. Until this change took place, surveillance of cases in younger age groups relied on voluntary reporting, and the true prevalence is unknown.

Interestingly, the initial stool sample in this case did not test positive for *C difficile* toxin. Most UK laboratories use enzyme immunoassay for the detection of toxins A and B, which has replaced both the "gold standard" tissue cytotoxic assays and anaerobic culture of the organism because it requires less technical expertise and has a shorter turnaround time. Unfortunately, the sensitivity and specificity of enzyme immunoassay are less than ideal.[16-18] The latter is not necessarily problematic in the hospital setting where the pretest probability of disease is high. However, in the community setting, where the prevalence would be expected to be much lower, the positive predictive value may drop to as low as 50-60%.[18] A recent systematic review discussed the use of a confirmatory cytotoxin assay in such cases to identify true positives, as part of a two stage testing strategy.[18] This approach warrants further discussion, and should be remembered when interpreting results. A cytotoxin assay might have added weight to the laboratory evidence of *C difficile* infection in this case. However, we think that the clinical evidence (together with the positive toxin enzyme immunoassay, culture, and histology) supports the diagnosis of *C difficile* infection, in the absence of another explanation on extended follow-up investigation. Although not typical of *C difficile* infection, the histological findings were pivotal in reaching the diagnosis. Without them, the initial negative *C difficile* toxin result in our patient might have been accepted as definitive, with potentially disastrous consequences.

Contributors: JE wrote this report, was involved in the management of the patient, and obtained consent. TA was the primary physician with responsibility for the management of the patient. In addition, TA and TR contributed to the scientific content and proofreading of the paper. PS reviewed the histopathology slides and provided the histology report of the colonic biopsy.

Funding: None declared.

Competing interests: None declared.

Provenance and peer review: Not commissioned, externally peer reviewed.

Patient consent obtained.

1 Ozaki E, Kato H, Kita H, Karasawa T, Maegawa T, Koino Y, et al. Clostridium difficile colonization in healthy adults: transient colonization and correlation with enterococcal colonization. *J Med Microbiol* 2004;53:167-72.
2 Aronsson B, Mollby R, Nord CE. Antimicrobial agents and Clostridium difficile in acute enteric disease: epidemiological data from Sweden, 1980-1982. *J Infect Dis* 1985;151:476-81.
3 Nakamura S, Mikawa M, Nakashio S, Takabatake M, Okado I, Yamakawa K, et al. Isolation of Clostridium difficile from the feces and the antibody in sera of young and elderly adults. *Microbiol Immunol* 1981;25:345-51.
4 Viscidi R, Willey S, Bartlett JG. Isolation rates and toxigenic potential of Clostridium difficile isolates from various patient populations. *Gastroenterology* 1981;81:5-9.
5 Wilson KH, Silva J, Fekety FR. Fluorescent-antibody test for detection of Clostridium difficile in stool specimens. *J Clin Microbiol* 1982;16:464-8.
6 Loo VG, Poirier L, Miller MA, Oughton M, Libman MD, Michaud S, et al. A predominantly clonal multi-institutional outbreak of Clostridium difficile-associated diarrhea with high mortality and morbidity. *N Engl J Med* 2005;353:2442-9.
7 McDonald LC, Killgore GE, Thompson A, Owens RC Jr, Kazakova SV, Sambol SP, et al. An epidemic, toxin gene-variant strain of Clostridium difficile. *N Engl J Med* 2005;353:2433-41.
8 Kuijper EJ, Coignard B, Tull P. Emergence of Clostridium difficile-associated disease in North America and Europe. *Clin Microbiol Infect* 2006;12(Suppl 6):2-18.
9 Chernak E, Johnson CC, Weltman A, McDonald LC, Wiggs L, Killgore G, et al. Severe Clostridium difficile-associated disease in populations previously at low-risk—four states, 2005. *MMWR Morb Mortal Wkly Rep* 2005;54:1201-5.
10 Wilcox MH, Mooney L, Bendall R, Settle CD, and Fawley WN. A case-control study of community-associated Clostridium difficile infection. *J Antimicrob Chemother* 2008;62:388-96.
11 Dial S, Kezouh A, Dascal A, Barkun A, Suissa S. Patterns of antibiotic use and risk of hospital admission because of Clostridium difficile infection. *CMAJ* 2008;179:767-2.
12 Boaz A, Dan M, Charuzi I, Landau O, Aloni Y, Kyzer S. Pseudomembranous colitis. A report of a severe case with unusual clinical signs in a young nurse. *Dis Colon Rectum* 2000;43:264-6.
13 Kaplan N, Davies A, Davies P. Clostridium difficile in a healthcare worker. *J Hosp Infect* 1996;32:322.
14 Strimling MO, Sacho H, Berkowitz I. Clostridium difficile infection in healthcare workers. *Lancet* 1989;ii:866-7.
15 Data from the mandatory healthcare associated infection surveillance system for Clostridium difficile infection, collated by the UK Health Protection Agency:http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1179744911867?p=1179744911867.
16 Delmee M, Van Broek J, Simon A, Janssens M, Avesani V. Laboratory diagnosis of Clostridium difficile-associated diarrhoea: a plea for culture. *J Med Microbiol* 2005;54:187-91.
17 Staneck JL, Weckbach LS, Allen SD, Siders JA, Gilligan PH, Coppitt G, et al. Multicenter evaluation of four methods for Clostridium difficile detection: ImmunoCard Clostridium difficile, cytotoxin assay, culture and latex agglutination. *J Clin Microbiol* 1996;34:2718-21.
18 Planche T, Aghaizu A, Holliman R, Riley P, Polniecki J, Breathnach A, et al. Diagnosis of Clostridium difficile infection by toxin detection kits: a systematic review. *Lancet Infect Dis* 2008;8:777-84.

Accepted: 30 January 2009