

QUININ SOLUTION FOR BLADDER  
IRRIGATION

ELLICE McDONALD, M.D.  
NEW YORK

In the course of fifteen years' experimentation in the treatment of cystitis in women, solutions of a great number of substances have been tried in the hope of discovering the ideal one. All the various silver salts have been tested. Two varieties of silver salts which have been made in my laboratory have been given a trial. Various oily substances, and combinations of germicides with oil, have also been investigated.

The requisite of an irrigating solution in cystitis in women is that it should be non-irritating, easily obtained, antiseptic, stimulating and healing to the inflamed surfaces.

Of all the substances used, quinin bisulphate best fulfils these requirements. It is easily soluble in water, is comparatively non-irritating and is distinctly antiseptic, much more so than the various irrigating solutions now used. It has been employed by me in cystitis in women for eight years. I first drew attention<sup>1</sup> to its use in 1908.

Quinin bisulphate has a phenol (carbolic acid) coefficient of 0.5, or is one-half as germicidal as pure phenol, and will inhibit the growth of fresh typhoid culture in the strength of 1:30,000. It may be used in irrigating in a strength of 1:2,000 without noticeable irritation.

It should be remembered that the antiseptic or growth-inhibiting action of a substance differs from the germicidal or bacteria-killing properties. The phenol coefficient, or the germicidal strength in terms of phenol, is the measure of the germicidal qualities. The antiseptic or inhibiting power of a substance must be measured by a comparison with other substances. The method which I have used in comparing the inhibiting qualities of substances is to take a measured amount of standard broth culture, 9 c.c., add to it 1 c.c. of twenty-four hour broth culture of typhoid bacilli, and to this then is added a certain proportion of the antiseptic substance to bring it up to the required strength to be tested, as for example, 1:30,000 of quinin bisulphate, which will inhibit. In this way one substance may be tested against another.

Mercuric chlorid will inhibit twenty-four hour typhoid in the strength of 1:50,000.

The more elaborate salts of quinin do not offer any advantage over the simple and easily obtained bisulphate. Chinosol (oxychinolin sulphate) has a phenol coefficient of 0.3, and will inhibit typhoid in the strength of 1:40,000. Thus, quinin bisulphate is a better germicide than chinosol, and differs but slightly from it in antiseptic qualities.

According to my experiments, mercuric chlorid will inhibit bacterial growth in a strength of 1:50,000; chinosol in 1:40,000; quinin bisulphate in 1:30,000.

The quinin bisulphate solution is useful for bladder irrigation and cystoscopic examinations. It is particularly satisfying to have such a strongly antiseptic solution through which to catheterize the ureters and so avoid infection.

174 West Fifty-Eighth Street.

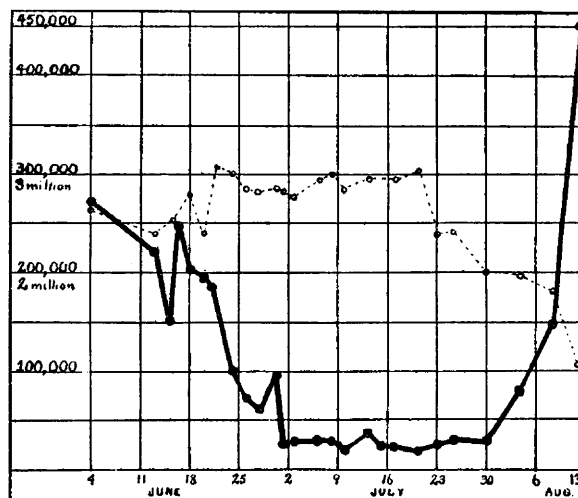
1. McDonald, Ellice: Med. Rec., New York, Feb. 22, 1908.

A CASE OF SPLENOMYELOGENOUS LEUKEMIA  
TREATED WITH BENZOL

CLARENCE F. GRAHAM, B.A., M.D., PROVIDENCE, R. I.  
House Officer, Rhode Island Hospital

In view of the present interest in the benzol treatment of leukemia, the following clinical report may not come amiss, both because of the immediate benefit from the use of the drug and from the later acute recurrence in the course of the treatment.

*History.*—The patient, Mrs. M. B., a native of Rhode Island, was admitted to the Rhode Island Hospital, June 3, 1914, complaining of shortness of breath, general weakness and an abdominal tumor. Two years previously she had been under treatment in the same hospital for uterine hemorrhage, cough and general weakness. At this time she had a red cell-count of 3,712,000, a white cell-count of 120,000 and a hemoglobin of 29 per cent., with the characteristic blood-picture of splenomyelogenous leukemia. The spleen was then found enlarged to the umbilicus. After six weeks of Roentgen-ray treatment the red cell-count had become normal, though the white cell-count remained high, and the spleen had receded to the costal margin. The patient's family history was negative. She had suffered from the



Curves of blood-counts: solid line, white cell-count; broken line, red cell-count.

usual diseases of childhood, and her health had been poor for the last seventeen years. For six months before her admission she had coughed a great deal, though without hemoptysis, and had lost weight. She suffered constantly from gastric disturbance, together with pain in the precordial and left epigastric regions, and had been extremely dyspneic for two months before admission. For two years the patient had been annoyed by swelling of the legs whenever she was about, and for a year previous to her admission she had noticed a gradually increasing mass in the abdomen. Two years ago she had had severe uterine hemorrhage over a period of two months, and had been twice curetted. The onset of the present illness cannot be definitely dated, since it had been only an aggravation of the symptoms already present, with the addition of frequent nosebleeds and a profound nervous depression.

*Physical Examination.*—The patient is a poorly developed and greatly emaciated woman of 40, propped up in bed and extremely dyspneic. The expression is anxious and pained, and the general condition seems almost hopeless. The skin is sallow and pale, and the mucous membranes are anemic. The chest is poorly formed, with small expansion. Respiration is rapid and labored, and evidently painful. The percussion note is everywhere resonant; the breath sounds are vesicular, with numerous moist râles over the whole chest. The point of maximum cardiac impulse is in the fifth inter-

space 7 cm. to the left of the midsternal line. The left border of the heart is 9 cm. to the left, and the right border 4.5 cm. to the right of the midsternal line. There is a loud, blowing systolic murmur at the apex. The pulse is rapid, of low tension and markedly irregular. A firm mass, evidently the enlarged spleen, occupies the whole left side of the abdomen, coming to the right of the midline just above the umbilicus and extending into the pelvis. The iliac notch can be felt at the umbilicus. The splenic tumor is decidedly tender on palpation. Both legs are slightly edematous to the knee; the knee-kicks are normal. There is no general glandular enlargement.

The blood examination on the day after admission showed: Red blood cells 2,610,000 (corrected for the white count); white blood cells 270,000; hemoglobin 60 per cent.

Differential count—Wright's stain—250 cells:

	No.	Per Cent.
Polymorphonuclear neutrophils .....	55	22
Polymorphonuclear basophils .....	0	....
Polymorphonuclear eosinophils .....	3	1.2
Small mononuclears .....	3	1.2
Large mononuclears .....	1	0.4
Neutrophilic myelocytes .....	183	73.2
Basophilic myelocytes .....	2	0.8
Eosinophilic myelocytes .....	3	1.2

The predominating white cells were myelocytes, ranging in size from 3.5 to 16.8 microns, with clear rounded or indented nuclei, and a finely granular protoplasm. No nucleated reds were found on this first examination.

*Treatment and Results.*—The patient had nearly expired as a result of the journey to the hospital, and her grave condition made it impossible to move her to the Roentgen-ray room for treatment. As no portable Roentgen apparatus was available, it was decided to try the benzol treatment. As soon as her condition had been somewhat improved by digitalis and rest, the administration of benzol (benzene, C<sub>6</sub>H<sub>6</sub>) was begun, and at the same time Fowler's solution was given in the usual way. The benzol, mixed with equal parts of olive oil, was administered in 10-minim capsules after meals, and was well tolerated with only occasional complaint of slight heart-burn. The initial dose corresponded to 15 minims of the benzol daily, and this was later increased to 45 minims daily.

The accompanying curve shows the course of the red and white counts from the time of the patient's admission. Up to the time when the benzol was begun there had been a drop in the white cell-count, possibly because of the arsenic, which was started before the benzol. Shortly after the administration of the benzol was begun, there occurred the usual initial rise in the white cell-count; then following this came a rapid and steady reduction in the leukocytosis. Hand in hand with this reduction came a slight increase in the red cell-count, while the patient's general condition improved greatly. By the end of a month she was sitting up in a chair, no longer dyspneic, and was rapidly recovering her appetite. The spleen was entirely to the left of the midline, with its lower edge at the iliac crest, and had become hard and no longer painful on palpation.

The differential count, July 3, was as follows:

	No.	Per Cent.
Polymorphonuclear neutrophils .....	84	42
Polymorphonuclear basophils .....	0	....
Polymorphonuclear eosinophils .....	2	....
Small mononuclears .....	2	1
Large mononuclears .....	20	10
Myelocytes .....	60	30
Transitionals .....	25	12.5
Nucleated red cells .....	4	2
Normoblasts .....	3	1.5
Unclassified .....	2	1

It was noted that the nuclei of the myelocytes were becoming more and more granular, and that the distinction between myelocytes and transitionals was increasingly hard to draw. Myelocytes of the type found in the first smear, with clear nuclei, were no longer to be seen. A few polychromatophilic and stippled red cells were found in this preparation, perhaps indications of the toxic effect of the benzol or of the arsenic.

For three weeks this improvement continued, and the patient even asked to be moved into the ward. Then, July

24, her temperature abruptly rose, and on the 27th she complained of pain in the left side. An area of extreme tenderness was discovered on the enlarged spleen, probably corresponding to a fresh infarct. The red cell-count had already fallen a little, and the white cell-count had risen. From this time her failure was rapid. July 30 the red count had fallen to 2,000,000 and the benzol was discontinued. Recourse was had to the Roentgen ray, but the patient developed the signs of an acute leukemia, and within thirteen days of the withdrawal of the benzol died with a white count of 456,000.

I wish to acknowledge the kindness of Dr. Henry A. Cooke in permitting the publication of this case record.

#### CLOSURE OF PYLORUS. CASE REPORT WITH SUGGESTION AS TO TECHNIC

RICHARD A. BARR, M.D., NASHVILLE, TENN.

*History.*—Miss G., white, aged 28, was admitted Nov. 30, 1914.

Family history unimportant. Patient had typhoid fever seven and one-half years previous to admission. Nothing else of interest in previous personal history.

Patient had stomach trouble ever since the attack of typhoid fever. This began with sour stomach and gas formation. Later she began having colic. The pain was epigastric and usually came on about 4 p. m. She would have these attacks of pain every day for a few days or even a few weeks, and then she would have no more for a varying length of time. At the time of this report she had had no attack for eight months. She had until two weeks prior to admission a burning spot in her back at the angle of the right scapula. This had been present for two years, but disappeared at the time mentioned and a dull ache began in the same place with a tendency to radiate around her chest to the ninth or tenth costal cartilage. She had never vomited and had only had nausea two or three times in the seven years. No jaundice, no constipation. Her attacks were worse in winter. There were times when eating crackers relieved the pain, but no period during which pain always came with an empty stomach. Her mornings were always free of discomfort. There was no period when pain followed the taking of food.

Three years and again two years prior to admission she had an attack diagnosed as peritonitis, which began with epigastric pain, and each attack kept her in bed for some weeks.

*Physical Examination.*—Physical examination was almost negative, except that the patient was thin. She was not emaciated and her skin was clear.

Blood: Hemoglobin 85 per cent. W. B. C. 11,500. R. B. C. 4,960,000.

Urine normal.

Stomach contents after ordinary test meal showed reduced acidity, but free hydrochloric and free lactic acid.

*Diagnosis.*—Chronic calculous cholecystitis with probable ulcer of duodenum.

*Operation.*—Operation disclosed plainly marked chronic appendicitis, indurated ulcer duodenum and apparently normal gall-bladder.

Appendectomy and posterior no-loop gastrojejunostomy were done, and then the pylorus was occluded by a variation of the Biondi method.

The necessity of occluding the pylorus in parapyloric ulcers without stenosis is now well established and the difficulty of accomplishing this occlusion, except by division and closure of the two ends, is equally well known. Timidity often causes us to try some less difficult procedure in hope of securing a good result, but we should only be deterred from making a complete and permanent occlusion by the special features of the individual case. In this case I mobilized the pylorus by ligature and division of the omentum. While I was doing this I decided to try a little technical procedure that I have several times thought of as being applicable in these cases.