I Was A Knife, Fork and Spoon Surgeon

By Dr J. Markowitz

"Fine surgical results you show here, doctor" observed a professional colleague of mine. He had just finished glancing through a mass of notes on surgical cases that I was compiling for a report.

His remarks were most complimentary both to myself and to the Royal Army Medical Corps, because the results he referred to were obtained under the most unusual circumstances. For eight long months in the jungle hospital of Chungkai, Thailand, I was the sole surgeon left to attend 7,000 desperately ill fellow prisoners of war - without drugs or instruments.

Yet, taking stock after performing 1200 operations under the most primitive conditions, our results were 75 per cent as good as those obtained in a modern New York hospital.

My story starts in May 1943, when Lt. Col. E. St. Clair Barrett RAMC, and I arrived at Chungkai under the escort of two Japanese guards. The camp was located in a jungle clearing beside the muddy Meclong River. A mile square, it was surrounded by a 12ft bamboo fence, and was constantly under Japanese surveillance. Outside the camp limits, except for a narrow road and a few small native clearings, there was nothing by thick jungle.

While being led to the Jap commandant's office, we were able to get our first close-up glimpse of the Chungkai hospital camp. It consisted of about 50 atap huts - structures without walls and with roofs of thatched palms - most of them full of sick men lying side by side on wooden platforms raised two feet off the ground.

Inside the orderly room, the Jap commandant, a 35 year lieutenant who had once been the prefect of Tokyo's police force, carefully examined us.

"You" he said to Col. Barrett, "will be chief doctor. And you", indicating me, "surgeon doctor" Dismissed, we found the medical headquarters where a pale young British medical officer stretched out his hand to us. "I'm Reid" he said "and I am glad to see you. - there is a hell of a lot of work to do"

From Reid we received a complete picture of the situation. There were 7,000 patients - British, Australian and Dutch - crowded into the encampment, sometimes many more. Our men were being forced to work at railway construction in the surrounding territory and every few days whole barges of human wrecks were floated down to Chunkai for treatment.

Dysentery was common. Hundreds were suffering with tropical ulcers - infections that ate deep wounds into the legs and were often fatal. Vitamin-deficiency diseases were everywhere. Several patients were in urgent need of surgical care. Men were dying at the rate of 17 a day and to ease the burden of the Padres and burial squads, they were being interred four to a grave.

Col. Barrett rounded up the other four medical officers - all young men, fatigued and worn by disease - to plan our campaign. He asked Reid what we had in the way of supplies. "For the 7,000 of us" Reid replied "we have enough purgatives and antiseptics for 50 men, enough chloroform for two people and are limited to seven bandages per month" Then he added, looking at me dejectedly "In the way of instruments, all we have are a few stethoscopes." After apportioning work to the other medical men, Col Barrett turned to me, "I hardly know how to advise you" he said. "All I know is that we have to start surgery in Chunkai as quickly as possible. Look around and let me know what you find"
I found my way to the "surgical ward", which was an ordinary atap hut, furnished with a few crude tables and benches, and there met my three assistants. Private Gordon Vaughan, a slight dark chap, had been a telegraph engineer on civvy street; Woolridge was a quiet lad with a warm face and kindly smile; and Tolson was a gangling red haired fellow who aspired to be a doctor. None of these men had had any pre-war medical experience.

"Not much like the place I used to work in down at the Mayo Clinic" I observed looking around. Vaughan offered to go to work right away. "I've done a bit of tinkering at mechanics" he said. "If there's anything you need I could try to make it".

On a piece of paper I made a rough sketch of some of the simplest tools required by a surgeon. "See what you can do with these" I said. He was studying the paper closely when I left for my living quarters to rest up after the long trip. Where to begin?

As I lay on my cot wondering where to start the overwhelming task of repairing these thousands of suffering and broken bodies, I suddenly remembered a phrase from a forgotten book: "Blood is all things to all tissues." Here then, was the answer. We must begin immediately to give transfusions to save the dying and to strengthen the weak.

This brought us smack into a tough problem. Under ordinary conditions, the blood is mixed with a citrate solution just as soon as it is received from the donor. Otherwise, due to the presence of a clotting material called fibrin, within five minutes it will turn into a thick jelly-like substance. We didn't have any citrates, so how could we prepare the blood for transfusion?

From the many years spent in the laboratory as a physiologist, I recalled that we used to defibrinate blood; that is, remove the fibrin which caused the clotting by simply stirring the blood with a spoon as it was received. From a pint of blood, a clot of fibrin the size of an egg would gather around the spoon.

I discussed my plans with Col Barrett. He was enthusiastic "Move quickly, we are losing almost 20 men a day". Vaughan and Tolson had fashioned a transfusion set which consisted of a few old bottles, a bit of rubber from a stethoscope and a transfusion needle which one of the doctors happened to have with him. No sooner had we set up our equipment in a corner of our hut than an emergency presented itself.

"It's one of the Dutch boys" Major Reid informed me "He's been unconscious for half an hour. It's

anaemia from malaria. If you don't help him, he'll soon be dead".

We decided that we were risking nothing by trying out the efficacy of our transfusion procedure. We chose a donor, after ascertaining the compatibility of his blood by a simple test, and the transfusion began. As the blood flowed from the donor, it was vigorously stirred by Vaughan. I jabbed the needle into the arm of the unconscious Dutchman and watched his face anxiously. The transfusion lasted a long ten minutes. The Dutchman stirred and then his eyes opened "Where am I?" he whispered in Dutch "What am I doing here?"

They were sweet words to hear! Defibrinated blood had proven itself and we had gained an important weapon in our fight to improve the health of our fellow prisoners. That was the first of 3,800 blood transfusions that were to be given without a single fatality. We gave transfusions for everything. Men dying with dysentery often recovered; men suffering from extreme vitamin deficiency became more cheerful and regained their appetite and will to live; tropical ulcers healed more quickly. Private Ball, a small Australian badly smitten by a succession of ailments, hovered between life and death for several weeks. Twenty five transfusions made it possible for him to be home today, alive and well.
It is a source of satisfaction to know that our efforts have since drawn the attention of the medical profession to the usefulness of defibrinated blood. It is convenient for the country doctor, working in isolation far from a supply of blood in citrate solution, or, in cases of accident, when the patient can't be moved and transfusions must be given from donors obtained on the spot, it may again save many lives, just as it did in the Thailand jungle.

"Well, Mark" asked the chief one morning "how's the surgical ward getting on?" I was able to report considerable progress. Tolson and Woolridge had canvassed the men and unearthed some real treasures. There were several pairs of haemostatic forceps which the men found handy for watch repairing and filched from heaven knows where! There were two balls of silk twine, excellent for ligature work, a carpenter's saw and a few butcher knives, sharpened and re-sharpened.

In the meantime, Gordon Vaughan was not idle. By bending back the prongs of a fork he fashioned a workable pair of retractors. He built a sturdy frame around a hacksaw blade to produce an ideal amputation instrument. His improvised anaesthesia mask plus 2ozs of chloroform completed my surgical equipment when we were called on to do our first operation.

Jock, a machine-gunner, had a severe case of osteomyelitis brought on by tropical ulcer. Like so many others, he had been forced to work in the thorny jungle undergrowth with no protection for his legs. Cuts would develop into sores which often ate their way into the blood vessels and bone.

Before any surgery is performed, it is customary in the military forces to obtain permission from the patient. I asked the padre to come to Jock's bedside, not knowing what the machine-gunner's reaction would be to our telling him that his leg would have to come off. "Jock" I said, "one of you will have to be buried - either you or your leg." "Take it off doc" he begged, "please take it off. It's driving my crazy."

The other medical officers agreed and we prepared immediately for the operation. Our saw instrument, butcher knife, needle, thread, towels and bandages were placed in a gas drum full of water and boiled. The patient was placed on the table and Major Dunlop administered the anaesthetic. A gauze tent was thrown over us in a futile attempt to keep the thousands of ants and bed bugs away.

Twenty minutes later it was all over. In the days that followed Jock's operation healed nicely and his general health improved. Within a month, he was hobbling around the camp on a leg that a friend had fashioned for him out of bamboo wood and pieces of leather obtained from a Sam Browne belt.

Now that we had demonstrated that major surgery was possible, there were hundreds of operations to be performed but we were down to our last ounce of anaesthetic and the Japs refused us a further supply.

One day I found Johnny - a lad who used to give us a hand once in a while when we were over-worked - sitting in a concealed corner of our atap hut tying small pieces of paper to flat pebbles. "Believe it or not" he said, "these little fellows are going to fetch us some anaesthetic." When I pressed him further, he told me that he was acting under special orders from Col Barrett. Every day at 5 a group of natives went down the road that passed by the camp. Some of them spoke English and when the Jap guards weren't looking, our boys established contact with them by tossing messages over the fence. "So you see" explained Johnny, pointing to his air-mail messages, "I've written here:- We want novocain. We will pay well. The rest should be easy." And it was - easier than we expected. Hidden in the grass Johnny negotiated successfully with the natives outside the camp right under the noses of the Jap guards. Within four days a small parcel came flying over the fence into the camp; back went our payment immediately. The rate of exchange decided upon was 3 watches for 500 doses of novocain. Never again did we have to worry about our anaesthetic supply.

With this bonanza we were able to start surgery in Chungkai in earnest. In the course of the next few months we performed 115 amputations - some of them doubles - with encouraging results. We erred on the side of conservatism. A regimental sergeant-major refused to part with a bad leg. "Give it a chance Doc" he pleaded "give it another week. I'll try and make myself eat. Maybe it will get better." Of course we agreed - we would compromise and wait for five days. On the evening of the third day he died in his sleep.

Only a small percentage of the tropical ulcer cases required amputation. We were able to patch up huge gaping wounds by skin grafting. We would give the patient a spinal anaesthetic, scrape the ulcer with a spoon and some weeks later, when it was clean, graft skin obtained from the thigh to the wound. The wound was then covered with a home-made variety of tulle gras - a bandage that doesn't stick - improvised from shell dressing and pork fat. The whole leg was firmly wrapped in sponge rubber obtained from a mattress.

In the meantime, Gordon Vaughan's talents as an instrument-maker were developing fast. He fashioned a rectal speculum, a rib-cutter, a quadruple needle for skin grafting, a tracheotomy tube and several

spinal and hypodermic needles. These same instruments so impressed the officers that liberated Chungkai two years later, that they asked permission to send them to London as exhibits for the British War Museum.

Our surgical ward became busier than ever. Numerous cases of appendicitis were turned over to us. We would keep every case for 24 hours hoping that the condition would resolve itself. It usually did. Of the half dozen appendectomies that were necessary, all patients recovered uneventfully.

Accidents were always happening. An angry elephant gored one of the men while he was laying railway ties. Another lad fell from a tree and had to have skull fragments removed from his brain. Jaw fractures, resulting from Jap, beatings were frequent.

An unforgettable incident occurred one day in July just as I finished an amputation on an Australian named Fletcher. The operation had gone smoothly despite the difficulty of operating in water up to my ankles - a condition resulting from the steady rainfall. Suddenly Vaughan tapped me. "Look Doc" he said "he's stopped breathing!" The spinal anaesthetic had evidently crept too far - not unusual when the general health of the patient is bad - and paralysed Fletcher's diaphragm. We didn't have a pulmotor to restore his breathing, nor could we apply the familiar technique used on drowning victims because the thorax under spinal anaesthesia is not elastic. Fletcher was slowly turning blue. "Quick" I snapped to Woolridge "take apart the stethescope and hand me the rubber tube." I shoved one end into the Aussie's mouth and blew rhythmically into the other. After five minutes I was relieved by Tolson. For twenty minutes the tube went the rounds. Finally Fletcher recovered and was well enough to see what was going on around him. He took the tube from his mouth, smiled weakly and whispered, almost inaudibly, "I'm sure glad you blokes don't eat onions. I hate 'em."

We had successfully applied the oldest method of resuscitation known to man. We took our lead from Elijah, a biblical gentleman who on one occasion revived a widow's son by blowing into his mouth. This procedure saved many lives in the succeeding months.

Private Vaughan had a hand in practically every important operation performed and as a gesture of recognition, Col Barrett and I decided to award him his sergeant's hooks. "Sorry Sir" he said when I broke the news to him "but I can't accept any promotion." "Why not?" He hesitated a moment. "The truth of the matter is Sir, I'm listed as a conscientious objector. Whenever anyone wants to promote me I am supposed to tell them that." I asked him about his pacifist views now. "I was young then and I think I was mistaken" he answered. "You can't take this sort of stuff" - indicating the suffering and brutality around him - "lying down." Private Vaughan became Sergeant Vaughan, army rules or no army rules.

"The doctors have gone nuts" said one orderly to another. The speaker was referring to the six doctors of Chungkai and I admit that there was justification for his opinion. The doctors were requested to come to my atap hut and perform one of the strangest chores of their army career. They were asked to file by a large tin containing a banana-smelling concoction and spit into it three times and to add the final touch of the bizarre, I sent them away with the warning "Don't breathe a word about this to anyone."

We were willing to be misunderstood because we were well on the way to solving our toughest problem: what to do about our inadequate diet? The effects of a practically unbroken diet of polished rice were appalling - bloated and paralysed bodies caused by beri-beri; the painful inflammation of the tongue, a symptom of pellagra; and the hideous ulcers on the mouth and scrotum resulting from a lack of riboflavin, a B-complex vitamin. One of the most important vitamins, thiamin (vitamin B-1) is normally derived from grain husk and yeast. Yeast is present everywhere. One of the familiar forms that most of us recognise is the white fuzziness that forms on a grape. Within the confines of our camp there were several jungle banana trees which yielded an unpalatable fruit. Often the fruit would become slightly rotted and exude a beery smell - a good indication that yeast was present. We made a mixture of bananas and rice but the presence of sugar is necessary to grow yeast so we spit into the mixture knowing that the diastase in the saliva would convert a part of the starchy rice into sugar. The result, after a few days fermentation, was a vitamin-rich beer worth its weight in uranium. Our new elixir worked miracles. The swollen stomachs, sore eyes and the ulcerated mouths responded to the magic of our cure.

We discovered another source of vitamins by watching the eating habits of the cows that were pastured inside the camp and then making a thick soup from the grasses they favoured.

As the tide of the war gradually turned against our captors, our treatment as Prisoners of War steadily improved. So much so that when I was posted out of Chungkai in February 1944, medical supplies were steadily flowing in and an entire new hospital camp was being constructed.

Since coming home, I have often been asked by professional friends what general conclusion I have reached as a result of my unforgettable sojourn at Chungkai. I tell them - and I am not always taken seriously - that I don't think that basic surgery has progressed very far beyond Lister and 1868. As definite proof, I point to the hundreds of surgical operations which we carried out with results not far below the standard set by our most up-to-date hospitals. I have a picture on my desk of 18 amputees, ex-fellow prisoners, taken in a Rangoon hospital where they were being fitted with artificial limbs. Whenever the going is tough, I glance at this memento of my days as a knife, fork and spoon surgeon. It gives me a terrific lift.