Medical Challenges in Sudan

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Being able to detect the mines, but it is not as simple as it sounds. It depends on a lot of climatic factors as well. APOPO was founded in 1997 and, since then, discovered that African giant pouched rats can detect explosive samples. It was found that non-destructive rats can also find hidden samples of TNT buried in soil. However, it was not until 2003 that MDRs were used in a real minefield.

Adriana Adamo, who currently works for APOPO as an MDR trainer, says, "When I started working for APOPO, I only saw fully trained animals — that had been trained in Tanzania. It was the first time MDRs were brought to an actual minefield, and we met all pretty excited and nervous. We work now with 18 MDR teams, all tested and accredited."

Adamo, has been working with APOPO and its MDR program for three years. On average, Adamo works with 12 rats weekly. Originally from Limpopo, Mozambique, Adamo has progressed from working with fully trained rats to learning to train baby rats, herself. Adamo recently assisted Adamo to learn how to train baby rats in Tanzania. He says thousand three months will be in Tanzania, he will be taught "to see two habits from trained rats" up a level where they can walk on a leash in the open, searching independently for training targets as a sandbox… This training provides me with sufficient skills on how to handle the whole training process, and teach others how to train rats." According to Adamo, the purpose of the Tanzania training course is "to learn the diseases of rat training."

The idea is to (one day) create an independent Mozambican MDR capacity. To reach this goal, APOPO gives you the opportunity to learn all the aspects of an MDR program, especially the preparatory training stages, which we lack so far in Mozambique.

Rats are easier to train and tame, which is useful in detecting mines quickly. According to Adamo, "Rats work quite independently from their trainers. They decide on their trainer’s personal affection" that they do, which allows the animals to be trained by multiple handles. In addition, in the small part of the rats, they are less likely than dogs or humans to want to just eat an unhealthy or unhealthy animal. They are also close to maize plants.

In a real minefield, trained giant pouched rats usually sit on square meters (120 square yards) of the sand. They participate in different activities. The trainer has to ensure that the rats are then be trained to detect a mine or piece of a neutralized ordnance. MDRs, which is difficult to achieve, since the rats have learned a mine or UXO by touching the root surface of the mineanty of mine.

Adamo thinks APOPO trainers must be patient above all the when it comes to training the new rats. "You don’t need to be a wizard to train rats. You need to keep a lot of patience. And if you can face some of my animals has a problem that (I don’t) know how to deal with, there are always experienced trainers around to help me out," he says.

For additional references for this article, please visit http://www.jmu.edu/jmaic/ papers/jina_kim_in_tanzania.html.

See Evidence, page 122.
On the way to the guest house, other staff members and I pass by the back of the hospital and the office de l’Hôpital du Monde (the place of the doctor you like me, who are rather famous; Challenged: Doctors of the World). MDM is a humanitarian assistance organization, founded in 1980 by former Doctors Sans Frontières (Doctors Without Borders) 64. I am currently working for MDM.

Working in Malakal

The mission in Malakal is to improve the surgical services at the Upper Nile State Teaching Hospital, a 15-bed, government-run facility originally built by the British in the early 1900s. It is the only government hospital providing surgical services to the inhabitants of three states: Upper Nile, Jonglei, and Unity. Funding for the current project is provided by the French Embassy in Khartoum. The scope of the project includes building new operating rooms, providing new surgical equipment and supplies, and developing a training program to help improve the knowledge of the local surgeons, anesthesiologists, gynecologists, and nurses.

My responsibilities focus primarily on working with Dr. Mamoun, the local Sudanese general surgeon, and his surgical assistants. I must admit, on my first day, I was rather impressed. I have a fair amount of Third-World experience, and I’m sure none of you would be horrified by what I saw. In fact, in some ways, Kamoura Central Hospital in Mali looks a bit like the Mymi Clinic in comparison, but nonetheless the context: Malakal was smack-dab in the middle of the 20-plus-year civil war. Sure, things are better now, but if anything, the financial situation for obtaining supplies has deteriorated. So the issue is what are they doing with the limited resources they have? And what is the outcome?

Well, that is where I am really impressed. In January 2006, they received 217 doses. Allegedly, 56 were appendectomies, but they also did inguinal hernias, gallbladders and two gastrectomies. In addition, post-operative wound infections are almost unheard of basically they are doing a great deal of good surgery with very minimal resources. My role is to help them improve on what they already have. As for the services of the surgical team, I really like Dr. Mamoun a lot of credit. Trained in Khartoum, he is in his mid- to late-40s, and has been in Malakal for three years. After finishing rounds my first day, we went to Camel to check on a new admission. We were free to do so because all elective operations were cancelled due to lack of sterile drapes. The reason, from what I understand, is that they elect to only work during the evening from 7 p.m. until midnight, but since there has been no surgery the night before, the drapes and gowns could not be sterilized.

Ah, life in Africa. It turned out to be good that we had the operating team were free. Two newly admitted patients were young men, 19 or 20 years old. They were lying on stretchers with hands and feet cradled around. A number of head and hand was still in his hands wrapped in bandages. It was a Type-II landmine victim. Despite the fact that the Malakal had been some of the fighting, relatively few more limbs know to stay away from the fighting. This may be due to the fact that small girls who lost a leg after stepping on a landmine. On round, we also saw a group of people returning to Malakal and treating another area near and exploded. It’s a sad fact that this is a common occurrence after the cessation of hostilities in many areas around the world.

All my experience is operating and training medical staff throughout Malakal have shown me the importance of war surgery, and although I certainly difference, I love to give credit to people like Ruth Haylock and others at my civilian landmine injury and were extensively involved in the way to implement three lessons. I am skeptical, however, because I believe this is not the

The Situation

This leads to things may actually be worse than what I have assumed regarding the problem of landmine injuries. The area around Malakal is an area thickly mined in the past, during the civil war. There is only place where land is available for unsettled. Now that it is the dry season, the ground is quite hard and many of the mines are actually stepped in the ground.

In speaking with the head of the United Nations Mine Action Service here in Malakal, I find that once the rains begin and the ground softens, there will be a significant increase in the number of landmine injuries. In the past two months, there have been seven victims brought to the Malakal Hospital. I have spoken to two, the soldier I wrote above (those thumbs I was able to save), a 6-year-old girl who required an above-knee amputation. A third child is also on the ward recovering from injuries he suffered after playing with a piece of unexploded ordnance. I was told the other victims were very severely injured and died soon after admission.

To understand the landmine situation more clearly, I have also spoken with the UNMAS folks about making sure the victim data is incorporated into the Information Management System for Mine Action databases. For those of you who don’t know, UNMAS is a global standardized database to collect information on landmines and unexploded ordnance. It is done at a global level. In addion, I am hoping to get a better training program on victim data established and have also written a proposal to get a workshop of surgical conscripts in place for if and when we start to receive large numbers of landmine victims. Data shows landmine victims utilize many areas of hospital resources, and we need to be prepared for such a disaster.

As for me, being here has the usual framework of operating in conditions. While here, I am not focusing on landmine casualties. I do general surgery. A few cases had to be cancelled due to lack of enough sterile drapes and gowns. We strived for camp, sufficient lamps, or fortuitous with touch. However, I am told that a batch of new surgical instruments being sent from Paris in a week or so—the supplies will certainly be welcomed. In addition, work on the new operating rooms is proceeding nicely and they will hopefully be completed soon. This lack of supplies or a new operating room has, of course, not really limited our operating; we managed to do numerous appendectomies and hernias, a few cholecystectomies, thyroidectomies, a burn contracture release and skin grafts, a
presence of landmines all over the world is an issue the United Nations and other world organizations are trying to address. But the difficult question lies in how to find landmines that are undetectable using metal detectors because the iron-containing, lateritic soils in Sub-Saharan Africa trigger metal detectors indiscriminately. In the past, mine-detecting dogs were used to help locate landmines, but in Tanzania and Mozambique mine-detecting rats are now being used to detect mines.

Another Landmine Incident

Saturday night, while walking to our favorite grilled goat restaurant, I was informed about another landmine/UXO accident. I immediately went to the hospital and discovered four nine-year-old boys who had literally been playing in a minefield (about 100 yards from their houses) and who had detonated a piece of UXO. One was dead on arrival; a second only suffered a few scratches. The other two had more severe injuries. One was yelling in pain, had a large chunk of his cheek missing, and had burns over his front, back and arms, probably from his shirt catching on fire. The last boy had a persistent wound to his left flank. Now the petition of getting an operating-room team to the hospital in time to stop the bleeding, at 7 p.m. on a Saturday night in a darfurian hospital in southern Sudan didn’t sound like an option, but to my surprise and delight, Dr. Mamoun was able to rally the surgery team by 10 p.m. We were exploring the abdomen of the child with the flank injury. We did the entire operation under ketamine anesthesia. The only injury was a hole in the descending colon; we preserved a 3-inch piece of colon. We mobilized the entire colon, exteriorized the wound, and created a temporary colostomy, which I was able to close before I left Malakal. All three boys are currently doing very well.

The CTC is set up in the local soccer stadium, a large expanse of dusty and dry, cracked ground. The entire area is enclosed by a corrugated metal fence, which is helpful in keeping people away from the infected patients; however, there are front entrances to the stadium and people and patients continue to enter despite the armed police stationed at the entrance. In the stadium there is a ground-level playing field and to the south of it is a mix of cotton and plastic fencing. The CTC is divided into four zones—one each for observation, recovery, for hospitalization, and for the staff and supplies. Sprayers are deployed at the entrance and a casual point in order to spray everyone’s hands and feet with a dilute chlorhexidine solution in order to limit contamination.

In theory, the medical care for a cholera patient is fairly easy and basic. Patients are admitted with severe diarrhea, vomiting and evidence of dehydration. The way to treat them is with fluid, lots of fluid, and then more fluid. And then when you think they have had enough and are beginning to drink, you make sure they are getting more fluid. Now when I say fluid, I mean it. Intravenous fluids, not electrolyte mixture given intra muscularly. Most guidelines say about 10 liters (6 to 11 quarts) per patient.

So, it all sounds fine and dandy, and not too difficult. There are local nurses to assist with the majority of the work and the doctor merely supervises. Well, the problem is we are in Sudan. Which for some of you who have been in Africa, where things never actually go as planned. An additional guideline for me is that I don’t speak Arabic or the local languages of Shilluk, Dinka or Nuer. This lack of communication adds to the frustration of working in over 100 degrees Fahrenheit in the middle of a hot, dusty stadium to deal with non-stop vomiting and diarrhea. Sure there are beds with large holes in the center and buckets placed under them, but often they do not collect all the fluid. Patients, especially little children, vomit on the beds, on the floor, and occasionally on the staff.

Getting Through CTC

The language barrier prevents me from effectively communicating with many of the patients and the caretakers of the children. Sure, I am learning some phrases, and although they were helpful in

bunch of hemorrhoids, and the drainage of a patient’s abscess. I have also initiated a formal classroom-teaching session two days a week and have been giving mini-surgical topics. So on the surgery side, there are in Arabic, amazigh (excellent).

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Working with Médecins du Monde, Dr. Kushner spent 12 weeks working for a mission in Malakal, Sudan. This article is his account of the first six weeks, written as a journal. Through his work, Dr. Kushner has helped many and witnessed the impressive ability of doctors in Malakal to work under stressful and sub-par conditions. Dr. Kushner also dealt with the cholera crisis and worked on getting support and supplies for a second Cholera Treatment Center site.

As my stress increased, I realized that not only were the nurses not continuing IVs, but even the patients themselves were not coming to us. That day I was assigned to the third big tent, which only had two patients when I arrived. More and more patients were brought in during the course of the morning, and I had to make and carry in the chabita beds and we upped the score. We had few supplies and those I could find were often IVs on the boxes of other patients. I assessed the new patients and filled out the one-page chart for each new admission. As the day wore on, it got increasingly difficult. The number of patients began to increase, we were flooded with new admissions, and my thoughts always turned to translating the hydraulic status of the patients, trying to keep a calm with the fluids in try.