Boy's Severed Arm Rejoined in Dramatic Operation

EDITOR'S NOTE: *The advance of medical knowledge does not take place in an even flowing wave. There are hesitations, and sometimes quick spurts when medicine confronts the opportunity to transform medical research into medical practice. The circumstances are apt to be dramatic. So they were in the case of Everett Knowles, Little League baseball pitcher of Somerville, Mass.*

By SID MOODY and JAMES CALOGERO
Of the Associated Press

BOSTON — Down near the tracks a factory worker was lounging in a doorway catching a quick smoke.

Shortly before, a freight train had rattled through on its way out of Boston. There was usually one about that time, a little before 2:30 in the afternoon when the kids got out of school. In fact the cops had been having their troubles keeping kids from hopping rides on the cars.

There came one of the youngsters now, walking up the street.

But the way he was coming brought the worker alert. The boy was crying and holding his odd looking right arm with his left. And blood had turned the sleeve of his shirt a deep red.

"I was in an accident," sobbed the boy. "Please help me."

Thus did Everett Knowles Jr., 12, alter th annals of medicine.

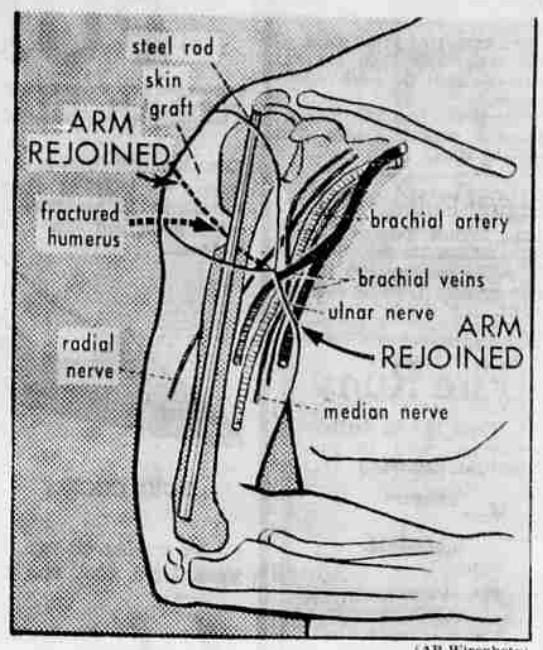
His right arm had been severed from his body just below the shoulder by a wheel of the freight train.

"I wanted to hop a train, just once," said Everett, "to see what it was like. I don't remember just how the accident happened." Police said later the arm dangled half way down the calf of his leg. It isn't certain when it fell away.

That was last May 23. Three weeks later, to the day, Everett Knowles went home.

With his right arm.

Doctors who teamed to rejoin the boy's arm to his body shun any claim to notoriety. But a search of records shows nowhere in medical history is there a case where the severed limb of a human has been reunited successfully with the body.



(AP Wirephoto)

Arm — This is how the arm of 12-year-old Everett Knowles was rejoined by surgeons of the Massachusetts General Hospital. The nerves must still be joined in a future operation.

On seeing the boy, the factory worker ran inside the plant, the Handy Card and Paper Co., shouting, "There's a boy out there with his arm hangin' way down low!"

Mrs. Alice Chmielewski looked up from her machine.

"All I could see at first was this little boy lying on the platform. There was blood everywhere. I couldn't see his face and I thought 'Oh, my God, it's my son.'"

She ran from her machine, scooping up any clean rags she could find as she went. She knelt beside young Knowles.

"Then I saw he wasn't my son, but I wanted to treat him like he was my own. I wiped his face and I was talking to him to make him feel comfortable.

"Then I saw the boy's hand near his ankle. I got between the boy and his arm so he wouldn't see it had been cut off. I tried to make a tourniquet."

But she couldn't. There wasn't enough of a stump.

Luck had played its first card.

Had there been enough of the shoulder to twist a tourniquet around, doctors later said, it might have damaged irrevocably the tissues later joined.

So Mrs. Chmielewski wadded up the rags and held them against the bleeding shoulder, just what the doctor would have ordered.

"He was weak but never lost consciousness. I kept talking to him like a mother. I was thinking he might die or pass out and I wondered who he was. I asked him his name and he told me. I asked him where he lived and what school he went to and he told me. All the time I was patting his face and holding those rags against the wound."

Meanwhile other employes had immediately called police. Sgt. Donald MacElree was cruising a half mile away. Police logged the call at 2:31. The cruiser was there at 2:34.

"When I got there," MacElree said, "Mrs. Chmielewski was holding the boy's head in her lap so he couldn't see his arm. She whispered to me that it was cut off. But when I tried to take it away from his body, he gave a little yelp of pain so I put it back and covered it with a blanket."

Three minutes later the local fire squad ambulance pulled up.

"They brought out a stretcher and lifted the boy onto it," said Mrs. Chmielewski. "They put the arm in beside him, with still a small part of it inside the sleeve.

"I got in the ambulance with him with one of the firemen. I kept talking to the boy and holding the rags in place. I kept his view blocked so he wouldn't see his arm. And I prayed: Oh, please, God, help him.

"The boy talked perfect sense on the platform and in the ambulance. He asked me once 'My arm, my arm, is it all right?'"

The ambulance reached the Massachusetts General Hospital approximately 15 minutes after the accident 3.7 miles away at suburban Somerville. At 2:45 Everett Knowles was on the way to the operating room.

Mass General, as the hospital is called, is one of the great hospitals of the world. It also has one of the largest budgets for hospital research in the country —about $5 million last year.

Among the research participants is Dr. Robert Shaw, a surgeon who has done considerable experimentation with blood vessels and arteries of animals. Dr. Ronald A. Malt, just completing his residency in surgery, also has done extensive work on reconnecting tissues.

But three young doctors in the emergency ward were the first to see that Everett Knowles might be more than just another amputee case. It struck them when they cut away the boy's shirt sleeve, which, remarkably had not been severed with the arm, that the arm might be restored.

You'd have thought the same thing if you'd been there," said Dr. L. Henry Edmunds, second assistant resident in surgery. It looked so perfectly good, so live. The only thing wrong was that it had been cut off."

In the medical books th replacement of a severed limb is called reimplantation. It is not a new concept and has been tried before. A man in California had a leg reunited with his body but the operation didn't take and the leg had to be reamputated. Portions of fingers have been regrafted successfully.

But a spokesman for the American College of Surgeons in Chicago, after looking through records, said, with customary medical caution, "This well could be the first time where an entire limb has been replaced and lived. It's an amazing feat."

Chance was working for Everett Knowles. The sharp flange of the train wheel had made a very clean cut. The boy had the resiliency of youth. Within minutes he had reached as skilled medical care as the country can offer and at Mass General doctors long had been talking and working toward such an operation.

"The only new thing in this case," said Dr. Shaw, "is that we put together many ingredients that have been handled separately before."

Dr. Edmunds and two other doctors decided a reimplantation was possible and called upstairs to Dr. Malt. Dr. Shaw was reached by phone, and rushed to the hospital. Within minutes, 15 doctors and as many nurses had gathered.

"The thing we had to first consider was making sure the boy survived," said Dr. Malt. "If we were to put back an arm and the boy died, or if at the end the arm was amputated, no very good purpose would be served by it. So before we did anything we wanted to be absolutely certain the thing was possible."

The boy's father, who works nights at one meat packing plant, and his mother, who works days at another, were called to the hospital and asked if they would consent to the operation. They did.

Then Dr. John Herrmann, first assistant surgical resident, wrapped the arm in sterile bandages and ice and rushed it upstairs to an operating room. He had a harsh deadline. Tissue will live only four to six hours away from the body.

He pumped an opaque fluid into the arm and X-rayed it to see if the veins and arteries were still open. They had to be if the operation could start at all. Then he filled them with anti-coagulants and antibiotics.

The hospital's plastic surgeon, then its orthopedist joined the other doctors and the operation began.

First the main veins serving the arm were separated and connected to their counterparts in the severed limb, much as a telephone cable is spliced. Then came the brachial artery, the lifeline that carries blood to the arm from the heart.

"When this was done the clamps that had controlled bleeding to that point were taken off."

Over their masks the doctors' eyes looked intently at the white and cold arm. It became pink with life. There was a pulse.

Next the severed bone of th upper arm. After clearing away of spintered bits shortening the arm an inch, a stainless steel rod was driven into the two part of bone and they were drawn together.

The nerves remained. If they could be joined successfully it meant Everett would regain the use of the muscles in the arm as well as the sense of feel.

But hours had already passed. Crushed fingers on the boy's left hand still needed attention. Further time-consuming surgery would be needed to assess what damage, if any, the nerve endings had suffered. So the three main nerve cables, identified by a heavy dacron suture, were left to another day.

Everett was wheeled to another operating room where other surgeons grafted skin from his right foot onto the damaged fingers. Dead tissue was cut away from the shoulder, bandaged and a cast applied d the last operation was over eight hours after the first began.

Meanwhile Mrs. Chmielewski had been waiting.

"I sat in the lobby for what seemed a long time. I was wondering how I could get back to work on the streetcar with my dress all bloody. I wanted to talk to one of the doctors but then one of the firemen came out.

"I asked him please to give me a ride back."

"Sure," he said.

Two weeks later she came back for a visit.

"He looked very good, smiling all the time. I was wearing a surgical mask and I didn't think he would know me. But he told me 'I wouldn't be here today if it weren't for you.'

"I cry when I talk about it. I cry easy."

There have been few tears from Everett Knowles.

Five days after his first operation, he underwent surgery again for skin grafts around his shoulder. The grafts took, but there was pain.

"Even after it was all over, the pain was pretty bad," the boy recalled, "but Dr. Malt told me that it would be a bad sign if the pain stopped, so I got scared whenever it went away.

"I must have been really lucky to have doctors like him and the other doctors. There wasn't no other doctors in the world who could do it. I read in the paper that they tried it some place else, in New York, I think and couldn't. I had the best doctors in Massachusetts or New England."

"In the world, honey," said his mother, Julia.

The prognosis for the future is uncertain. Some time in the next several months Everett will return for the all-important nerve operation. If the nerves are relatively undamaged, surgeons will try to reconnect the tiny fibers, a terribly delicate operation, to make certain the right nerve is mated to its counterpart in the arm. There may be muscle transplants and a bone graft. In all it will be 18 months or two years before the case of Everett Knowles can be closed.

Yet in practical information medical science has learned as much from Everett Knowles as it have given him. His operation doesn't mean all accidental amputations can be restored. But it has shown that under optimum conditions they can.

And by the very fact that the arm has remained alive this long, a milestone has been reached.

In the meantime, Everett is determined to resume his career towards becoming a major league pitcher. He pitched his little league team to a 7-6 victory the day before his accident.

And the determination. As soon as he got home, his arm still immobilized in a cast, Everett was thinking of baseball.

"I'm gonna exercise my arm and then go down to the park and play ball. If I can't do it then, I'll exercise some more."

Doctors don't think Everett will ever be on the pitcher's mound again, but they are cautiously hopeful he will regain use of his arm sufficient to do all the normal functions of daily life.

But who can prescribe limits to the recuperative powers of a boy who complained on his last day at Mass General to Dr. Malt that he had a stomach ache, a headache and "felt bad all over?"

"Then I told him he was going home," said Dr. Malt.

"They're all gone now," whooped Everett Knowles.