

# Hearts & Bones

By K.M. Chavez

Miss Ella Shaw, one of the few women to receive a license for surgery from the Royal College of Physicians, spared only a passing glance out the window at the sprawling Venusian landscape. She knew that if she stared too long at the unfamiliar terrain, the dual pang of homesickness and guilt would overwhelm her. As the newest surgeon from Earth, she knew she had to be impeccably professional.

The white, shining floors and pristine air of the Royal Hospital of Venus--a British-run hospital on the foreign planet--furthered her feeling of disorientation. Back in London, her residency was at a hospital with grimy floors carved with deep rivulets to trap blood. It always smelled of sawdust and death. None of those smells hung in the circulated air of Venusian hospitals.

"Ms. Shaw!" a voice pulled her attention to a tall, smiling doctor with dark brown skin and a curved nose. He smiled and said, "we have use of your surgical skills today in Operating Room 3, if you please. Dr. Isaac Yishai, at your service."

"Yes, of course," she replied, willing her voice to be steady. "Allow me a moment to dress, and I will be there immediately, Doctor."

Doctor Yishai was a physician, and therefore had the title of "doctor". As a surgeon, Ella had no such prestige.

The dressing room for the surgeons and assistants was equally foreign to her; in London, Ella had to remind those with her to wash their hands. On Venus, there was no superstitions about the importance of cleanliness.

She shook off her uncharitable thoughts as she buttoned a white surgeon's gown over her clothes. She was here, in the pristine world of Venusian medicine. It was unfair to think ill of those who could no longer receive her help.

She slipped on the cloth mask, tightening the elastic until it fit over her delicate features. The Operating Rooms were clearly marked in English, Spanish, and the native language of the Venusians. Ella shivered, under her robes. She didn't quite know what to make of the strange natives, and was grateful she rarely had to interact with them.

Another set of footprints stepped in time with hers, and she turned to see her colleague, Dr. Roshita Mangal, a physician of Medical Anatomy and Pharmacology. They'd met briefly during Ella's orientation, and she found the other woman to be hard and unknowable, despite being only a few years Ella's senior.

"Dr. Yishai is already with the patient," Dr. Mangal said without even a perfunctory greeting. "Ambulatory services brought him in only a few minutes ago. Are you ready, Miss Shaw?"

Ella tipped up her chin. This would be her first major surgical operation on Venus, and she didn't want Dr. Mangal to sense her nerves. "I am, Dr. Mangal," she replied evenly. "Please proceed."

In the Operating Room, the heart and blood pressure monitors shrieked and large screens flashed red along the walls. Nurses, robed in their Venusian-style mint-green coveralls, threw open drawers to find syringes, scalpels, needles, and glistening vials of medication.

Ella had been briefed on the new equipment, of course, in the weeks she'd spent in preparation for her tenure here, but it was momentarily overwhelming now. Everything was a shining chrome color, state-of-the-art and foreign. She stumbled forward, towards the operating table, and did not feel any divots under her feet.

On the table before her lay about 140 pounds of sinew and bone soaking wet and five-foot-seven if an inch. She glanced up to the identity screen over the door and was struck by how young he looked in his picture. She thought a chief inventor would be older.

"We're going to lose him if we don't get him stabilized soon," a now-familiar voice, steady over the shriek of the machinery, called out. Dr. Yishai stood, a mountain in the madness. "Dr., Miss, if you will."

Dr. Mangal dove in with a determined familiarity, with Ella at her heels, and investigated the stringy mess of the patient's forearm.

"The extensor compartment is gone on this arm," Dr. Mangal reported, her voice sharp enough to break teeth on a syllable. "I need to test for nerve reactions. I need gauze and a splint, and tie up the other limbs. Examine all the extremities for nerve readings, make sure to keep them moist."

Ella took her place next to Dr. Mangal, anxiety washing away as the puzzle of this man's body unfolded before her. The gore didn't bother her; it was a fact of life in London's Voluntary Hospitals, where only those who didn't have the money to treat their ailments were admitted. Usually when it was unavoidable and their wounds infected. Therefore, Ella's stomach and nerves were steady. Her patient had third-degree

burns all over his body, raw and weeping puncture wounds gaped up at her from his chest, and both legs crushed.

"What in God's name happened?" Dr. Yishai muttered, reaching both hands into the patient's chest to massage his exposed heart. Two nurses hooked up the transfusion machine, which chugged placidly as it circulated artificial blood through the patient's body. The heart monitor stopped shrieking. The patient's blood pressure was still low, but manageable.

Now that the initial chaos had somewhat subsided, Ella had the time to examine the man splayed out on the table. The less damaged side of his face looked about her age: roundabouts thirty, with a hawk nose and dark skin, laugh lines prematurely carved into his face.

"Our patient's name is Herschel Silverstein. He was apparently working on an experiment that exploded," Dr. Yishai informed the room, glancing up at the information screen.

"What kind of experiment?" Ella asked.

"The file doesn't specify," Dr. Yishai replied with a shrug. "Fairly typical of the Royal Science Academy. This, however," his voice rose in pitch and interest, "will interest you. Our young fellow is a resident of London, and has a medical history file that would be as long as my arm were we to print it out. Some from your home hospital, Miss Shaw."

Ella froze on the spot as though she were a child caught misbehaving, then looked at the inventor lying on the table. Millions of miles away, and yet right before her. Like a phantom to haunt her.

"Be alert, Miss Shaw," Dr. Mangal interrupted coldly. "We don't have time for flights of fancy. Our patient will need to be equipped with cybers."

Ella shook herself, pulling her mind back to the moment. "Yes," she agreed. "Quite a few, I should think. His legs are completely crushed, his right arm is gone, and we're going to need an entire chestplate. I can't even fathom how his brain managed to stay intact with his left eye and ear blown out like that. Severe burns on his chest, broken ribs, punctured lung...other internal organs are stable, fortunately. I need a saw, please," she told the nurse hovering at her shoulder.

Ella inspected the patient's ruined legs. The tibia and fibula of each leg weren't much beyond little pieces of bone. She might be able to save the femurs, but the cartilage of the knee was completely torn. She held the left leg in her hands, one hand supporting the shredded calf and the other cradling the heel, eyes tracking where she should begin the incision.

Idly, she looked down at his foot. The bottoms of his feet were calloused and worn as though shoes were a new phenomenon. Not the feet of a scientist. She'd held this foot before, in London, when she treated little urchin boys with hollow eyes and suspicious mouths.

"Saw for you, Miss Shaw." The nurse handed her a tool with the handle of a saw, but none of the steel. Instead, she pressed a button, and a small surgical laser emerged, white-hot.

"Right," Ella said. "Hold him steady while I make the incision." The laser hissed through the flesh, meeting only vague resistance from the bone. The leg fell away. His other leg met the same fate.

"When Dr. Mangal is done managing the arm, we'll start inserting the plugs for cyberprosthetics," Ella told a nurse, glancing up at Dr. Yishai, "Doctor, have you got the blood pressure under control?"

"Soon. The heart is under some strain. I will need to watch the heart and entrust the cybers to you two." He eyed the patient's face. "Although I think we're going to have to work on his facial wounds soon. Both left eye and ear are a loss."

"Very well," Ella replied before burying herself in her work. #

For the next hour, they worked in silence. Ella could feel her shoulders aching as she rearranged Herschel Silverstein's extremities and worked on positioning the prosthetics that would have to support him for the rest of his natural life. She thought on her patient's humble origins. If he had not rose above his station, he would certainly have died in London.

As though reading her mind, Dr. Mangal said, "Miss Shaw, do you have a discomfort with those who were patients of London's Voluntary Hospitals?" Dr. Mangal's large black eyes felt as though they were staring into her very soul. "You had a noticeable reaction to Mr. Silverstein's background."

"Not at all," Ella replied as she sprayed the stump of the patient's left leg with water, letting it fall pinkish into a white basin. "I simply did not expect it."

"I suppose it is quite unthinkable for a poor man to gain any position, in your eyes," Dr. Mangal said coldly. "Though I can't understand why you should think so; you yourself managed to find more...comfortable employment."

Ella understood what Dr. Mangal was truly saying. "You think I took advantage of the notoriety of being a female surgeon in London to secure this position," Ella said. She could not blame Dr. Mangal for this summation of her character. Indeed, she sounded like Ella's

internal thoughts, always mocking: *You abandoned them for easier work. You left them to die.*

"It is my hope," Ella said, "that we may take the knowledge we have learned here and share it with the hospitals of Earth. But you are not...completely uncharitable." She looked up at Dr. Mangal, content for the other woman to serve as her judge, her confessor, "I do not have the constitution to soothe perpetual suffering. I moved here to escape the shroud of death that hangs over medicine on Earth."

There was a long pause as Dr. Mangal regarded her, weighing Ella's confession against the feather of her judgment. Finally, she said, "I respect your understanding of your limits. I observed that you were treating us with snobbishness. I see now it was something else."

"Grief," Ella replied, surprising herself with her frankness. "May I prevail upon you to inspect my work on his legs? I find myself in need of a change of position."

"Of course," Dr. Mangal replied, as though they had not had so revealing a conversation. "I've called for robotics to provide a prosthetic. You may start with the eye and ear."

Ella nodded, switching places with Dr. Mangal. "We're going to have to get a panel back here," she gestured to the gaping hole where his ear used to be, "and we'll have to peel back the scalp." Ella

motioned for the up the scalp and mess of his ear.

nurse to return to her the scalpel. She would pull set up little plugs and ports and then deal with the

secure," Dr. Yishai said. "We'll need to keep an eye for a while, and I had to reconstruct most of his

"Chest cavity is on his left lung ribcage, so we need to have some plates on it."

"We can panel up the head and the chest at the same time," Ella said. Dr. Yishai hummed in agreement. They worked silently for a while before the heart monitor shrieked in alarm, causing Ella's heart to turn quite terribly.

Dr. Yishai looked up in surprise. "The heart's failing," he exclaimed. "Damn. I need a stabilizer, now." A nurse scurried away.

"We took care of internal bleeding," Dr. Mangal said, pressed her fingers against his abdomen, feeling for any swelling. "There should be no more issues."

"The heart is reacting adversely to being under the artificial circulation machine too long. It's too stressful," Dr. Yishai said, looking uncharacteristically distressed. "Damn it all, I should have--"

"Not now. We will simply get the heart working again," Dr. Mangal spoke. "Then we'll take him off of the machine."

Dr. Yishai pressed the stabilizer between the ribs and pressed the button at the top. A shock of electricity made the heart jump and shudder, but the monitor kept screaming. He shook his head as he tried again. "I think we'll lose him." The patient's body was still too fragile. It couldn't handle the stress of heart failure for too long.

Ella, though no stranger to death, felt a weight of grief at the prospect of this loss. She'd hoped it would be different here, but it appeared that death followed her across the stars as well.

"We won't," Dr. Mangal snapped. "I'll take that." She took the stabilizer out of Dr. Yishai hand and dialed up the shock power a notch. The shock sent a jerk throughout the patient's body. Ella watched as Dr. Mangal, with her burning eyes and sharp tongue, simply refused to yield to even death. She bent over his chest, her fingers massaging his heart. The tenacity lit something like hope in Ella's breast, but still too fragile to act upon.

Dr. Mangal looked over at her, scowling as though she could once again perceive Ella's thoughts. "I should appreciate your help, surgeon," she said, simply.

Ella set her jaw and reached in, pushed her hands in next to Dr. Mangal's. "Put him on a regular I.V. drip," Ella ordered a nurse. "We'll need support to help keep his heart rate."

The two of them--physician and surgeon--stood in tense silence, hands over a stranger's heart, for what felt like an eternity.

And, like a bird from a cage, Herschel Silverstein's heart fluttered under Ella's hands. "I feel it," Ella gasped. Far away, the heart monitor stopped shrieking. "He's stabilizing."

Dr. Mangal rocked back on her heels, relief flashing briefly across her face. "He is," she replied, wiping her brow with the back of her hand.

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Ultimately, their efforts saw Herschel Silverstein with new mechanical limbs, a metal chestplate, and a mask over half of his face. He was outfitted with an experimental eye replacement--a promising mechanism

during testing but not guaranteed. Their patient would need extensive physical therapy, over years, and would not regain control of all the faculties he lost.

However, he was alive, and Ella's report was brimming with promise for new understandings for the medical community. As she leaned over her writing desk in her own office--another strange luxury--she felt

content. No longer haunted by phantasms.