

Laying Abominable Ghosts to Rest

Using new techniques and an abundance of empathy, a pioneering center is setting standards for how to heal the wounds, physical and emotional, of torture victims

COPENHAGEN—Massoud* is lucky to be alive. A Kurdish Iraqi whose father is politically active, he was seized by Iraqi police one night in 1985 and thrown into Saddam Hussein's prison system at the age of 19. For 2 years, Massoud says, he was subjected to "every kind of torture that can be imagined, and many that cannot." Friends were tortured to death before his eyes. Then suddenly, and as inexplicably as he was abducted, he was released. He got himself smuggled out of the country and ended up in Denmark, where he was granted asylum. In body, Massoud was free and safe. In mind, however, he remained a prisoner.

Plagued by sleeplessness, crushing depression, and phantom pains, Massoud turned to psychotherapy. After a few sessions, though, he gave up because the therapist's proings, gentle though they were, evoked memories of interrogations in Iraq. His anguish persisted for years—then in 1996 he heard about a clinic here in Copenhagen, the Rehabilitation and Research Center for Torture Victims (RCT), and gave it a try.

Today Massoud is a quiet-spoken father of two, married to an Iraqi woman he met here. RCT staff members, he says, have eased his physical pain and restored his dignity. Massoud is one of hundreds of torture victims from around the world who have found succor at RCT, a clinic that pioneered the diagnosis of torture and, says Stephen Regel, a therapist at the Centre for Trauma Studies and Traumatic Stress Service in Nottingham, U.K., is "at the vanguard of research" on how to restore the vitality of torture victims.

The Iraq prison scandal and the graphic images that have dominated headlines have imposed extra burdens on the center and its patients. Photos of U.S. soldiers abusing Iraqis in the Abu Ghraib prison have sent many patients into tailspins, says Belinda Labrosse, a clinical psychologist. Massoud is one of the hardest hit, she says: "He's not doing well these days."

Mending shattered lives

Inge Genefke, a Danish physician, founded RCT in 1982, but the stimulus for the

idea came in 1974, when Amnesty International asked her and several other doctors to start rigorously examining torture victims. At the time "we knew almost nothing about the effects of torture," says Genefke. "We had no data." She was eager to help by testifying as an expert in asylum bids and in prosecutions of accused torturers.

Genefke and her colleagues soon uncovered more than the telltale physical scars. To her surprise, what all victims had in common was mental illness. No one had appreciated the complexity of torture's after-effects, she says, which makes victims like "broken glass." Healing such wounds requires "integrated, simultaneous care" by clinical psychologists, physicians, physiotherapists, and social workers, she says. Currently RCT's staff of 60 treats about 150 torture victims a year, mostly from the Middle East and from hot spots such as China, Kosovo, and Zimbabwe.

For psychologists who come to work at

RCT, says Labrosse, the first big adaptation is to throw out the "neutral, distant" relationship between doctor and patient that has ruled since the days of Sigmund Freud. "It just doesn't work here because it's too much like what they've gone through," she says. Instead, psychologists must, "above all else, make the patient feel in control." Another key adaptation is cultural awareness. Most of Labrosse's patients are Arab men who "are uncomfortable confiding in a young white woman" such as herself. After persuading them to regard her as a doctor, says Labrosse, "they come to trust me."

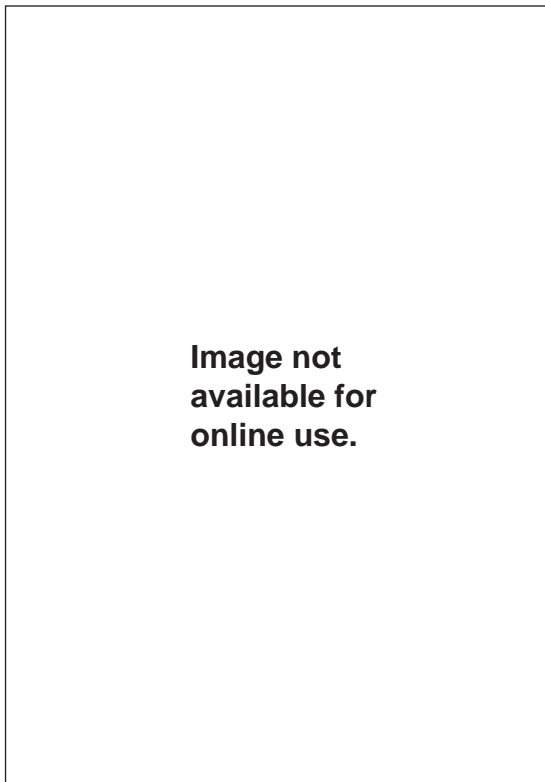
Treating physical injuries comes with its own challenges. "We don't deal with the immediate wounds," says RCT physician Lise Worm. By the time victims reach the clinic, their superficial injuries have healed. "We have to deal with the lasting damage," which she says is far more insidious and puzzling.

The only way to solve these medical puzzles, Worm says, is to understand the cruel techniques employed by torturers. She recalls a patient who was rushed to the hospital regularly because his frequent chest pains and heart palpitations suggested that he was on the verge of a heart attack. Eventually the symptoms were traced to torture-inflicted damage to nerves leading from his spinal cord to his torso. Such disorders are common among RCT patients, often developing after confinement in tiny cages for weeks at a time. Other ailments include recurring infections, particularly in victims repeatedly dunked in tubs of filthy water, and the manifold indications of head injury from beatings. "So often I find problems originating from brain damage," says Worm. "It can cause almost any symptom."

One of the most stubborn problems is chronic neurogenic pain. "Torture ruins the nervous system," often making pain sensors in the skin hypersensitive, says RCT physiotherapist Karin Prip. Some patients are in constant agony because even the touch of clothing triggers waves of pain that worsen over time. In treating such injuries "we try to find methods that do not cause pain," says Prip. "But that's not always possible." Helpful approaches include bandages that desensitize the skin through constant pressure and emotional coping mechanisms that can dampen pain as effectively as any opiate, Prip says.

Getting the word out

Away from RCT's treatment rooms is a research department set up in 1999 by Edith Montgomery, a clinical psychologist, to bring rigorous analysis to bear



Inhuman abuse. Nearly half of all countries use torture techniques such as falanga, depicted here in a victim's painting.

CREDIT: RCT

* The patient's name has been changed.

on the work. For many clinicians, “the idea of scientifically testing your methods is still foreign,” Montgomery says. “They think it’s a waste of time and money they could be using to help their patients.” But objectively assessing methods is “the best way to improve them.” The first application of science at RCT is to test which approaches are most effective for which kinds of patients.

Some studies focus on torture’s physiological legacy. One effort is to probe changes from *falanga*, the beating of the soles of the feet. Victims cannot walk far without excruciating pain, even if their feet appear undamaged. Using magnetic resonance imaging, RCT specialists have uncovered a thickening of a tendon in the foot in *falanga* victims. The finding should help document abuse and may lead to better treatments. Having such forensic tools “can be crucial in some cases,” says David Rhys Jones, a human rights lawyer at the Medical Foundation for the Care of Victims of Torture in London.

The center’s research is not limited to the lucky few who make it to Copenhagen. Several epidemiological studies are under way, including one to track children of torture victims to assess mental health consequences across generations. Another study focuses on prisons in Nigeria, examining the relationship between guard training and prisoner abuse. (On 28 June, AAAS, publisher of *Science*, will host a forum on scientific and legal issues surrounding torture and prisoner treatment.)

RCT staff members say they are frustrated at how slowly the awareness of how to diagnose and treat torture has filtered out to the wider medical community. Since the Vietnam War, an immense amount of work has been done on posttraumatic stress disorder, a complex of psychological problems that persists after witnessing traumatic events. Yet “almost no data is out there on



Healers. Edith Montgomery and Belinda Labrosse in the RCT research library, the largest collection of torture-related documents in the world.

torture, which causes worse symptoms,” says Labrosse. Hospitals still tend to overlook or misdiagnose torture victims, adds Prip, so “we’re trying to get torture rehabilitation into the standard medical curricula.” Just providing it as an optional course would be “extremely useful,” says Duncan Forrest, a physician at the Medical Foundation, “because there is widespread ignorance among doctors.”

One of the most important lessons is that

the mental scars never completely heal. Labrosse is worried about Massoud, who canceled an appointment last month. She says that some images of torture in Abu Ghraib are strikingly similar to Massoud’s drawings of his own experiences, and the evocation of his torment has triggered a relapse of anxiety attacks. RCT may be able to piece victims back together, but they remain fragile.

—JOHN BOHANNON

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Evolutionary Biology

Changing a Fish’s Bony Armor In the Wink of a Gene

Genetic researchers have become fascinated by the threespine stickleback, a fish that has evolved rapidly along similar lines in distant lakes

A sassy little fish—a mere 6 centimeters long—that can turn a threatening red, builds nests, and feuds with competitors is now becoming a star in research on genetics and evolution. Long a favorite of behavioral scientists, the threespine stickleback is garnering attention for what it can reveal about genes, morphology, and the speed at which a species can adapt. Half a dozen recent papers on sticklebacks show “all kinds of interesting things about the genetic and molecular basis of how organisms evolve,” says David Kingsley, a vertebrate geneticist at Stanford University.

This new research adds weight to a provocative idea that a little DNA—perhaps just a single gene—can control many traits that affect an organism’s ability to thrive; in this case, the gene may have enabled sticklebacks to evolve out of tight situations. Not only have sticklebacks adapted quickly to past and current environmental change, but several researchers have documented that they still retain a remarkable adaptive flexibility.

Since the 1930s, the prevailing view has been that evolution moves in a slow shuffle, advancing in small increments, propelled by numerous, minor genetic changes. But some have challenged this dogma, notably H. Allen Orr, an evolutionary biologist at

the University of Rochester in New York. In 1992, he and his colleagues argued that just a few genes, perhaps even one, could power long-term change. Such change could rev up speciation. Lately, the Orr camp seems to be gaining ground, in part because

of studies of sticklebacks, says R. Craig Albertson, an evolutionary biologist at the Forsyth Institute in Boston. He and others are finding that “simple genetic changes can have profound effects.”

Salty past

Kingsley is a convert to stickleback research. Five years ago he and his postdoctoral fellow Katie Peichel turned to it

when they were looking for a way to add a touch of reality to their studies of the genetics of bone development. Neither lab mice, the subject of their previous work, nor lab-bred zebrafish offered much insight into the causes of natural variation in a natural setting. So Kingsley and his students searched for a species with a rich natural history literature and a lifestyle that would enable both field and lab studies. “The stickleback had everything we wanted,” he recalls. About the same time, zebrafish expert John Postlethwait of the University of Oregon, Eugene, was on a similar hunt, casting about for a fish with a well-known biology and an interesting evolutionary background in which he



First class. Colorful enough for a Swiss stamp, sticklebacks have captivated a growing number of biologists.