Exclusive: Chantelle Doyle tells how a 2.5m shark lacerated her leg, how her partner fought it off with his fists and why we need to help the fish that bit her

by Graham Readfear

Chantelle Doyle lies diagonally across her hospital bed with her heavily bandaged right leg propped up on a chair at a 30-degree angle.

She is trying to help her nerves heal. It might not work. Great white sharks can bite hard.

Twelve days ago, the 35-year-old was surfing with her partner, Mark Rapley, when a 2.5m juvenile great white took her leg in its mouth and severed the nerves below her right knee, taking a chunk out of her calf.

What Rapley did in the seconds that followed in the surf off Shelly Beach near the New South Wales city of Port Macquarie has made news bulletins across the country and parts of the globe.

Seeing his partner in trouble, he paddled frantically to her, jumped on to her back and rained punches down on to the animal's head and near its eye until it let go and slipped away.

Doyle has not spoken publicly until now about that day; about how in those first moments the shark readjusted its grip on her three times; how she feared Rapley's punches might not be enough; and how she poked fun at her helpers as they dropped her on the way to the ambulance thanks to the surfboard-come-stretcher that was slippery with her blood.

Instead, she has been doing a lot of thinking – talking to shark experts and conservationists. Had the shark made a mistake?

"They said maybe it did just want to eat me," she says.

Now, in return for being compelled by the high drama – and there is much of that – Doyle wants people to know why sharks are important and why the oceans need them.

She wants people to donate to a crowdfunding campaign for a marine charity. She wants people to "be the best versions of themselves" and treat the planet more gently.

The encounter

On Saturday 15 August, Doyle, an environmental scientist, was up early to work on her PhD. She was staying, along with Rapley and their three-year-old son, Hamilton, at her parents' place near the picture-perfect coves and beaches of Port Macquarie.

But that morning her thoughts were muddled and she thought some fresh air and a surf might help.

Leaving Hamilton with his grandparents, the couple headed to the beaches. Flynn's Beach was "flat, flat" and Town Beach was too choppy. But Shelly Beach around the corner looked good.

It was sunny and clear when they paddled out – Doyle first, catching a small rip to take them out near two surfers on longboards, with Rapley following.

Waves were irregular and, while Rapley caught two waves, Doyle, on her mini-Malibu board, lucked-out five or six times.

She moved closer to shore where the waves were breaking. Then it hit.

"As I was paddling, something hit me underneath the board with enough thrust to throw me up and off the board," she says.

"I just thought – 'whale or shark' – and I looked down and there was nothing grey. I felt something grab my leg – I think I yelled 'Shark, shark'.

"It grabbed me and I grabbed the board and it readjusted ... There were three distinct readjustments of the jaws. I was holding on to the nose of my board.

"It was like being bitten by a dog – it's painful but it's more this intense pressure and squeezing and crushing."

Rapley was about 10 metres away and saw Doyle thrown off and started paddling to her. "I knew straight away. It's a gut feeling," he says of the moment when his partner Chantelle – who he calls "Chon" with a soft "sh" sound – was taken.

He was only a metre away when he glimpsed the shark. He slipped off his board and on to Doyle's back and, bracing himself with his left arm, gave the shark punches with his right fist.

"I was just flailing – Hail Mary punches – and I'm thinking 'Just get the bloody hell off'. I was connecting, but after the first two it felt ineffectual."

The shark's flesh was hard – like a professional boxing bag, he says.

"Chon's leg was completely in its mouth. I expected from all those videos to see a teethy jawline – but I didn't see that."

The shark's head and eyes (which Rapley has seen in his thoughts repeatedly since) were above the water line. He aimed his punches more towards the shark's eye and kept swinging furiously "until I thought it would let go".

His assault lasted maybe only 10 seconds or so, but the pair have talked about those seconds since. It was long enough for both to think that, perhaps, the shark might not give in.

But after eight or 10 punches – Rapley is not quite sure – the shark opened its jaws and swam away. Through the whole experience, Chantelle did not see the shark that bit her.

Rapley got back into the water to get to his partner's shoulder to talk to her, but Doyle wanted him out.

She says there was little pain at this point – "I think it was adrenaline" – and it wasn't until she thought she was semi-safe the pain began to rise.

But she could not feel anything below her right knee. "It was like this heavy weight hanging off the back of my leg. Like a bag of concrete. To me, it felt like it was dragging along."

Doyle and Rapley repositioned themselves on their boards. By this time, two other surfers had arrived to help and they all paddled their own boards ashore – two either side of Doyle with Rapley behind.

Doyle's group caught a wave that surged them to the beach. "When I hit the sand, I slid off the side of the board into the shallow water and laid there wondering ... 'What do we do now?"

But Rapley had missed the wave and was left behind. This, he says, was the scariest moment. "There's nothing I could do but paddle, and I'm thinking ... 'What am I going to arrive to?'"

There was blood in the water, but Rapley did not know how bad Doyle's injuries were.

"I had this fear of arriving with half her calf missing or blood jumping out everywhere," he says. "When I saw the leg was intact, then the fear goes away a bit and you're thinking about getting her to safety."

One of the surfers grabbed Doyle under the shoulders and pulled her on to the sand. A nurse who was on the beach and had seen the drama unfold knelt down, saw the wound and said: "You're going to have to tourniquet that right now."

At Doyle's suggestion, the leg rope from her surfboard was ripped off for a tourniquet.

"I knew my leg was there but I didn't want to look at it after that. I was very nauseous but was starting to be in a lot of pain."

An ambulance had already been called, but the car park was 700m away down the beach. Using a surfboard as a stretcher, Rapley and four others took about 20 minutes to carry Doyle to meet the ambulance.

At one stage, they dropped Doyle on to the sand. Blood had made the board slippery, but she didn't want to make her saviours feel guilty.

"I just remember thinking that I had to be nice," she says. "I just said, 'I'm only 60 kilos, what's wrong with you?""

The ambulance was waiting. She was taken to a local hospital and then – seeing the amount of micro-surgery that was needed – she was flown by helicopter to the bigger city of Newcastle and John Hunter Hospital. Late Tuesday, she was moved again to a hospital closer to Sydney.

"I have said to Mark that I had a feeling I was going to be bitten one day," she says. "Our attitude is that life throws you big challenges. We've looked at each other and said, 'Well, here's that big challenge we were waiting for."

In hospital

As the Guardian speaks to Doyle, she has had an allergic reaction and is "lying here with chamomile lotion over three-quarters of my body" to ease the itching. Talking is a good distraction, she says.

Doctors, nurses and skin specialists are coming and going, but she feels the need to apologise for the interruptions.

There are flowers everywhere – "it smells like a florists" – but the slowly deflating balloons match her mood from earlier today.

The shark severed the nerve in her leg below the knee. She has only limited feeling and there is no movement yet. There will be challenges thrown up constantly over the coming months and years.

She has had two major operations already, with more planned. One for seven hours to repair damage to muscles, tendons, bone and nerves and fix up the gashes and another for four hours to do a skin graft over an orange-sized hole in her calf.

Right now, she says, doctors are unsure about how well the leg and nerves will heal. Predicting how nerves respond is difficult, and it could be months or longer before she knows if she can keep her leg. A prosthetic leg is a worst-case scenario, but possible.

Punching for healthy oceans

Doyle and Rapley, a financial planner, live at Cromer in northern Sydney and have been together nine years. They are not married and are in no rush. Rapley has been the media face so far as the hero who punched a shark to save the girl.

But now the pair are compelled to talk about something else before the media moves on.

Already, they have started a crowdfunding campaign to raise money for the Australian Marine Conservation Society with a catchy hashtag – #punchingforhealthyoceans.

"We're not suddenly shark evangelists," Doyle says. "But they are a keystone species and we want our kids to have a nicer environment. I've seen the Great Barrier Reef collapsing.

"I think I'm more interested in sharks now. I'm a scientist but I work on terrestrial areas and hadn't done much marine work.

"I'm actually proud that Australia has marine systems that are healthy and sharks are an integral part of that. Having sharks means you have higher densities of fish, and so we should be proud of that."

The two have thought carefully about how they interpret what happened, and also how their reaction to it should not exclude others from having entirely different responses. But they have settled on how they are going to refer to it. They won't be calling it an attack.

"We are calling it the encounter," Doyle says.

They have been talking with experts on sharks, and speaking to the state's Department of Primary Industries about its SharkSmart program.

Doyle was curious if the shark had mistaken her for something else – maybe a seal. "But they said maybe it did just want to eat me." Juvenile sharks seem to be more troublesome than others, she says.

While unprovoked shark bites are extremely rare, Australia's love for ocean recreation means they get more than other countries. There have been six deaths from sharks this year.

For years the approach has been nets on beaches and state-managed hooks in the water to catch large sharks. But those hooks kill sharks and also kill other marine animals.

Some studies have suggested the numbers of large sharks in Australia is dropping. Globally, research suggests reef sharks are in a precipitous decline in many places.

Doyle is encouraged there is a move towards less invasive smarter technologies; hooks with sensors so fisheries staff can catch and release; drones in the air to warn bathers; real-time phone app updates on locations of tagged sharks; and research into personal shark deterrents. The pair want to see measures around the world that keep both bathers and sharks safe.

Doyle says: "A way to get positives is to learn more about sharks and to start this fundraising. That's to make the most of this event – this encounter.

"I wanted to call out to people and say, if you have this niggle of guilt that you should be doing something better, then listen to that niggle and act. Whether it's picking up rubbish or putting those solar panels up.

"We want this to encourage everyone to just be the best version of themselves. We all know when we're taking the easy option."

Rapley says: "We are openly taking this opportunity to turn the attention away from us. Chantelle would hate the attention on her – she's trying to divert attention."

They have been in touch with a charity group known as the Bite Club that supports people who have been bitten by sharks or families who have lost loved ones from encounters.

Doyle says: "I do know that some families have taken some comfort from shark bite survivors when you say that, at the time, you don't feel that much. It's only afterwards."

Will they be going back into the water? For Mark, the answer is complicated and he is still working it through. He is not scared but he is now thinking if it would be selfish "if something happened and I left them".

"Even if Chon ends up with a prosthesis, we've still got each other and we can be parents to our son. That's a story that's not that scary with hindsight."

Doyle is an experienced scuba diver, and she says under the waves "was always my safest of places and it will be again."

- "It just might take a few years of rehabilitation before I can surf again."
- To support their campaign, visit give.everydayhero.com/au/shark.