



## Oxygenate yourselves! -The Hyperbaric Centre Magazine

**N23- September- October 2015**



In 2010 the Hyperbaric Centre of Ravenna started a new experience with the blog [www.iperbaricoravennablog.it](http://www.iperbaricoravennablog.it). The aim of the blog was to share the stories of the patients because we believe that the solution to the of one person is the solution to the problem of so many others.

This experience led to "Oxygenate yourselves!", The blog magazine of the Ravenna Hyperbaric Centre. The magazine is a new tool to read and preserve the most widely read stories. This number contains the articles most-read in September and October 2015.

Enjoy the reading!

### **Jhonny Depp will make a movie on Mick Doohan's life. Would he come to the Hyperbaric Centre to film?**



"Mick is a wonderful person and I want to do a documentary about him". With these words the actor Jhonny Depp stated his intention to shoot a movie about the former world champion of MotoGP

Michael (Mick) Doohan. Depp met Doohan in Australia on the set of "Pirates of Caribbean 5" and he was struck by his story. Who knows if Jhonny Depp will shoot a part of his movie here in Ravenna in our Hyperbaric Centre, where, more than 20 years ago, Doohan was treated and cured after a horrible accident.

It was June 26th 1992. Mick Doohan, 27 years-old, was competing in Holland in the Assan circuit when he had a terrible accident and he broke one of his leg. The surgery was complicated and Doohan risked to have his leg amputated. With the intervention of Dr Costa and his Mobile Clinic (a medical emergency facility, created by Dr. Claudio Costa to rescue riders injured during motorcycle races) Doohan was first brought to Italy to be operated again, therefore he arrived to the Hyperbaric Centre in Ravenna. Here he was treated with the hyperbaric oxygen-therapy along with a rehabilitation program. Thanks to these treatments Mick Doohan was able to ride his motorbike again and to win for five consecutive times the World Championship class 500 between 1994 and 1998.

After this experience, the Ravenna Hyperbaric Centre continued the collaboration with the Mobile Clinic and developed a specific program for the treatment of sport injuries. Also Valentino Rossi, another champion of MotoGP, was treated under this program. You may remember his accident in 2010 during the Mugello GP and his puzzling recovery. He undertook a comprehensive rehabilitation program that included the treatment in what Rossi called "philosophical hyperbaric chamber". The treatment allowed him to be back to compete and win only 40 days after the accident.

Now we just have to wait for Jhonny Depp. Once he will dismiss the clothes of the pirate Jack Sparrow and he will wear the motorcyclist's suit, he should certainly pay a visit to the Hyperbaric Centre. Here he could film and recreate one of the most important moment in Doohan life, when he was prevented from losing his leg and he went back to chase and win five world titles.

## My mother-in-law has been suffering from an ulcer in her left leg for more than two years



Good morning Doctor,

I wanted to ask you a question : my mother-in-law has been suffering from an ulcer in her left leg for more than two years. I specify that she is not diabetic, so I wanted to know if she can be treated in your Centre even if she carries a pacemaker and make use of the medication Eliques.

I look forward to your response,

Best regards, Francesco

**Nicola Fusetti, nurse, responds**



Dear Francesco, I'm sorry for your mother-in-law and for the pain she has been bearing for over two years. From your question it's not clear what type of ulcer she is dealing with, but we can still help you and I hope you will find my answer helpful.

At the Hyperbaric Centre we treat difficult wounds of any kind following a holistic approach. Once the person get in contact with our administrative office, she can schedule an appointment. During the first visit the patient will be welcomed by our medical staff that will understand the type of ulcer to be treated.

During the first visit we also collect clinical data and we do some instrumental investigations that allow us to frame the situation of the wound and of the patient. Among the instrument we use to study the patient situation in this initial stage, there is the Flow Meter Laser Doppler. This instrument provides information on the amount of blood actually pouring tissues and on the remaining

capacity of the microcirculation to respond to stimulations. This tool also allows us to evaluate the presence of any peripheral neuropathy (heating test and postural change test).

Another test we undertake is the Transcutaneous Oximetry which measure the oxygen tension for the evaluation of the circulation (it is a non-invasively test). The following stage is the Doppler Velocimetry to evaluate the Ankle Brachial Index (ABI) which indicates how much blood reaches the ankle compared to the wrist and help us to choose the proper banding.

Ulcers can be classified as venous, arterial , mixed, neuropathic and vasculitic, therefore the type of advanced medication and the banding compression degree are established after an ultrasound evaluation of the lower limbs.

For the healing process we may suggest also the Hyperbaric Oxigen Therapy. Normally, this therapy has no contraindications for people using anticoagulant drugs such as the Eliquis (like your mother-in-law does) nor for people that have peace makers. However, I recommend to always carry with you and to show to the doctors the booklet with the directions and instructions of the peace-maker model.

If you and your mother-in-law feel that a visit to the Hyperbaric Centre may be useful for an evaluation of the wound, you can book a check-up by calling the number 0544 500 152.

Best wishes,

Nicola Fusetti

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## I have a small vascular ulcer. Can I swim in the sea ?



Good morning,

I have a small vascular ulcer that I am treating with Nucliaskin s .Since I will go to the beach, I would like to know if I can swim in the water.

Thank you. Kind regards, Patrizia

### **Serena Giannini, nurse, responds**



Dear Patrizia, vascular ulcers are a consequence of changes in the circulatory system and therefore they can affect the arterial system, the venous system or the lymphatic system. For this reason it would be important to know the origin of the ulcer you have in order to have the big picture and to be able to suggest the best treatment for you.

The medication that you are using can be correct if the wound is not infected, it appears to be rosy and rather superficial. In addition to this medication, it would be necessary to use a compression elastic bandage. The degree of the compression must be decided according to the vascular alteration that is evaluated with the venous and arterial Doppler ultrasound of the lower limbs.

The bandage is necessary for the healing of the wound because it helps the liquid to go back within the vessels that do not contain it properly any more.

Once the ulcer is healed it is essential to properly use the elastic compression knee sock to prevent the ulcer to be recurrent.

As for the swimming in the sea, I would recommend not to do so until the wound is completely healed. The wound is basically broken skin, this means that it is like an open door to infections. In case of serious complications these infections can become systemic. Non-sterile environment, such as the sea water, make it easier to get infections.

Therefore, I suggest you to keep the wound covered and to not expose it to direct sunlight.

Best wishes for a good vacation,

Serena Giannini

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## After 8 months of treatment, can we hope for full recovery from Spondylitis?



Dear Dr. Longobardi,

on January 25, 2015 my father happened to fall on his butt. After taking him to the nearest emergency room we made the necessary x-rays. From the hospital we had been sent home with the assurance that there was nothing to worry about.

After about 10 days my father could not stay standing anymore. He did an MRI and it turned out that he had a fracture. The orthopaedic surgeon recommended him to stay in bed for about 25 days, after this time he could have stayed standing wearing a bust. He did everything as the doctor said, but after one week my father started to have severe pain again and he had to be put to bed once more. He did another MRI, a neurosurgical visit in a Roman hospital and a kyphoplasty surgery.

It was April first, and after this last surgery my dad does not get any better. The pain is so excruciating

that he resorted to opioids. He got hospitalized again and here diagnosed with a spondylitis. Through a CAT biopsy the doctor were able to isolate the Staphylococcus Aureus, then they started with a targeted treatment (Vancomycin for 24 hours and kabi ciprofloxacin 400mg / 200ml 3 times a day ). After 20 days my father was dismissed and the drug replaced with Dalacin c 150mg (12 capsules per day). However, instead of continuing to improve, my Dad returned to worsen.

The specialists in infectious diseases and the neurosurgeons of the Roman hospital were not available often enough, so we went to a private clinic to have my Dad visited by a researcher in infectious disease. In the meanwhile, another MRI finds a new fracture and a hernia.

By August 4th, he was doing a new treatment: Tavanic 500 + 250mg, Rifadin 300mg x 2 and 2 x Minocin100mg. However, my father does not tolerate Minocin, so we suspended that drug after 15 days, while he continued to take all the others. On September 15 we did a CAT scan pet control, we do the analysis every week now (and thanks God they are fine). Dad lacks of appetite, drinks little, he still have pain and he walks very little with the bust. He leaves the bed only one hour per day.

Note that he suffers from psoriatic arthritis treated for years with methotrexate (suspended after a cerebral thrombosis of the left sigmoid sinus 2 years ago) and with Enbrel (suspended after this last infection).

Now, after eight months of treatment, can we hope for a cure? Do you think the hyperbaric oxygen therapy may give him some help?

Thank you, Daniela

### ***Claudia Rastelli, Doctor, responds***



Dear Mrs. Daniela,

I am deeply sorry to hear what your dad is going through and for how long he's been fighting a battle against pain and spondylitis. Unfortunately, this disease has often a long healing time.

The spondylitis is an inflammation localized at the level of the vertebrae (*spondylitis*) and of the intervertebral disc (*discitis*). The spondylitis can be caused by various inflammatory or infectious disease, often following an infection in another part

of the body that spreads through the blood until it reaches the spine. Sometimes it may follow from a spinal surgery or it can also spread for contiguity of the adjacent soft tissues. In the 58% of the cases the spondylitis hit the lumbar.

As for what you wrote me, the disease seems to have been well managed, with diagnostic tests such as MRI and with biopsy and therapies targeted to the isolation of the pathogen. Additionally, the normalization of inflammatory markers resulted from blood tests represents a good news.

The Oxygen Hyperbaric Therapy (OHT) might be helpful for the property of the oxygen that enhances the effects of the specific antibiotic-therapy since it allows the drug to arrive with a higher concentration in the infected area. Additionally the OHT ease the cleaning of septic focus, reduces oedema of the sick tissue, inhibits the chronic inflammatory processes and stimulate the deposit of new healthy bone instead of the "ruined" one. Another benefit is the improvement of the general state of the organism.

At the Hyperbaric Centre of Ravenna we recommend a program that integrate the cycle of hyperbaric therapy with a physiatrist assessment. This allows us, through the tele-thermography, to diagnose a possible radiculopathy (an inflammation of nerve's roots) which is often the cause of the pain experienced by the patient. The program includes also a rehabilitative therapy to strengthen the postural muscles (to be done once the fractures are healed, in your case), an adequate pain therapy and the use of FREMS (Frequency Rhythmic Electrical Modulation System), a special frequency modulated equipment that reduces pain through neurostimulation.

If you want to book an appointment or need more information, please contact our administrative office at the number 0544500152 or email us at [segreteria@iperbaricoravenna.it](mailto:segreteria@iperbaricoravenna.it).

Hoping for a fast recovery of your father, I extend my warmest greetings

Dr. Claudia Rastelli

*Degree in Medicine and Surgery at University of Florence*

## May Hyperbaric Oxygen Therapy be useful to treat venous leg ulcers?



My mum has been trying to cure her illness for almost two years, but she didn't succeed. After several visits to dermatologists and vascular surgeons, we still do not get the desired results, and the situation continues to worsen.

She was given a lot of creams, but none of those worked. I wanted to understand how the hyperbaric chamber works, how many sessions are needed for a problem of ulcer like the one of my mother and what are the possible contraindications.

Thank you in advance.

Giuseppe

### ***Klarida Hoxha, nursing coordinator, responds***



Dear Giuseppe, thank you for getting in contact with us. I'm sorry to hear about your mother's problem that has been going on for a lot of time, causing great suffering to both of you.

Medications and creams should come in a second stage of the treatment of venous ulcers. The most important treatment that leads the patient to heal is the compression (bandage). The compression can be achieved in different ways: with multilayer compression bandages, with long or short-stretch bandages or with elastic tubular bandages. In the case of ulcers that do not heal easily, the ideal compression is achieved by wrapping a multilayer bandage. The banding should be done by an experienced operator since a poorly performed bandage can be dangerous for the leg.

The bandage should be made with different and specific levels of pressure: the higher pressure (about 40 mm Hg) at the ankle, and the lower pressure (about 18 mm Hg) below the knee. Increasing the limb hydrostatic pressure, the superficial vein pressure can be reduced.

At the Ravenna Hyperbaric Centre, nurses are experienced in the treatment of ulcers and they do every day an average of 50 bandages for various kinds of ulcers. The banding aims to reduce inflammation, to reduce oedema and to ensure an adequate compression. Therefore, the banding is associated with medications and creams, which vary according to the type of wound.

The hyperbaric treatment is used as a preparation of the ulcer to the reconstructive procedures or in case of other serious damage (for example, an over-infection).

Hyperbaric therapy is prescribed as a further stage after the compression therapy and after having carried out a vascular study with adequate diagnostic procedures. During follow-up visits, we detect with precision the extent of the ulcer and the ground type of injury according to the criteria of Falanga. Only after these procedures we determine the treatment protocol to be followed and the number of sessions of hyperbaric chamber required.

As for the drawbacks, the doctor evaluates the clinic history of the patient and, in case of problems (heart, eyes, lungs, etc.) requires examination and assessment from various specialists before prescribing the hyperbaric therapy.

If you wish to schedule an appointment you can contact our administrative office at the number 0544 500 152.

I wish your mother the best of luck.

Kind regards,

Klarida Hoxha

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## Sudden deafness and Hyperbaric Oxygen Therapy



Dear Dr. Longobardi ,

I'm writing you to have some information about the hyperbaric therapy.

Since several months ago I am hearing the sounds like they are muffled and I am having some ear problems as mild hearing loss (I need to precise that I suffer from tinnitus in my left ear). Following the advice of a specialist I underwent a magnetic resonance. The report is the following.

“BRAIN RM -RM FACIAL SOLID

The test was performed using sequences Spin Echo, Fast Spin Echo, Echo gradient, FLAIR and DWI, T1 and T2 weighted, with sagittal axial scans and coronal scans with a thickness of 2-5 mm.

It can be noticed that some small gaps have supratentorial white matter of gliotic type in the subcortical area that affects the radiated crowns and the mid-oval shaped centres. This is most evident gap is in the left side, with 6 mm of diameter. We point out the symmetric hyperintensity in T1 of the pulvinar (possible calcifications?). We recommend to see a clinical specialist for assessment. We do not notice any changes in diffusion. The median structures are in axis. There is a normal display of the corpus callosum. We report ventricular cavity and subarachnoid CSF spaces of normal width and normal morphology of the inner ear canals. We do not notice any pathology at the ponto-cerebellar angle, bilaterally. The sequences obtained show no abnormalities of the pituitary gland and the tank at the base appear to be normal. There is normal pneumatization of perinasal sinuses.

We do not see images that may indicate diseases in the *meatal ostium* area. The nasal septum

deviates to the right. We do not recognize alterations of the orbits and their contents. Normal pneumatization of the mastoid cells, bilaterally.”

What would you suggest me to do?

Giusy

### **Dr. Adrea Galvani, responds**



Hello Mrs. Giusy, thank you for writing us.

I do agree with the need to see a specialist for a further assessment. As for the information you asked regarding the Hyperbaric Oxygen Therapy (HOT), the hearing loss has to fit some criteria in order to be treated in a hyperbaric chamber. Therefore, to assess whether these criteria are respected, a careful examination and analysis of the audiometric route is needed.

Also, it is important to know that one of the most important criteria to determine if oxygen therapy may yield to positive results is the timing of the intervention. In fact, the HOT has to be started within 30 days from the diagnosis.

The program proposed by the Hyperbaric Centre, for people suffering from these problems, consists of 15 sessions, plus a possible extension of 10 more sessions if there is an improvement. The program is organized in a session per day for 15 days; each session lasts 108 minutes and takes place as alternating hyperbarism (standard hyperbaric therapies usually last 90 minutes, but for patients with sudden deafness they are extended up to 108).

During your first visit to the Hyperbaric Centre we would assess whether a drug therapy is also needed in addition to the hyperbaric chamber sessions, and if there is the necessity to do a FREMS (Frequency Rhythmic Electrical Modulation System ) therapy.

I hope this answer your doubts. For any further information you can reach out to our office in any moment at the number 0544 500 152.

Best wishes, Dr. Andrea Galvani

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Alma Mater Studiorum of Bologna*

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## Diving after an implantology: when is it possible to go back to dive?



Good evening,

I kindly ask if you can give me some advices. I just did a dental implant: a mini sinus-lift to the crestal bone (including synthetic bone) and a titanium 1 implant in the maxilla.

Since I want to do some diving activities, should I be aware of any contraindications? If necessary, how long should I wait before diving?

Thank you, kind regards.

Daniela

### ***Dr Luigi Santarella, responds***



Good morning Daniela, and thank you for writing us.

The DAN (Diverse Alert Network) claims that before diving it is necessary to wait at least 24 hours after a dental care performed under anaesthesia and not dive for at least one to two weeks after a dental surgery.

The process of installation of the implant can incur into technical problems due to bone deficiency during the operation. In this case, before inserting the implant, it is necessary to regenerate the bone in order to avoid that the final dental step result in too long teeth which would lead to an unfavourable crown/root relation.

The bone grafting procedures are very complex and they are based on the graft of homeoplastic or

alloplastic materials. These materials need total rest in order to be integrated, since the sinus is an active cavity that changes its volume when breathing.

I therefore believe that it is appropriate to extend the waiting time during which avoiding diving. A proper resting time would be from six weeks up to two/three months, depending on the extent of the intervention.

Considering that you underwent an operation of mini lift, I would recommend you to wait six weeks before start the diving activities again.

It remains crucial the opinion of the dentist who handled the follow-up visits after the operation. He is the only one aware of the extension of the intervention, therefore he knows better whether it is appropriate to extend the resting period.

My general suggestion is the following: after the period of convalescence, you may return to dive only in the absence of disease to the upper respiratory tract (for example, the common cold).

Then, when you resume your diving activities, try to be particularly careful to the descent phase. Avoid too rapid descent and prefer to do frequent delicate compensation operations rather than a few compensatory operations that can force too much your sinuses.

We are available for any further information at the phone number 0544 500 152 .

Best wishes, Dr. Luigi Santarella

*Degree in Medicine and Surgery at University  
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## Angelo fractured his femur neck in a bad motorbike tumble: how can he get better?



Dear Doctor,

I'm 50 years old and recently, on August 24th, 2015, I had a motorcycle accident that resulted in a meso-cervical meshed fracture of the right femur neck.

The following day, I have been operated for the osteosynthesis of the fracture and three cannulated screws in titanium were inserted during the surgery.

I was prescribed absolute prohibition to carry any load for six weeks and magnet-therapy for six hours a day for thirty days.

I would like to know if you consider adequate and sufficient this prescription, and if you think that an eventual use of hyperbaric therapy may bring significant benefits in terms of healing times.

Thank you for your response.

Best regards, Angelo

### **Dr. Andrea Galvani, responds**



Good morning Mr Angelo, thanks for writing to us.

In order to understand and frame completely your problem it is important to start with an accurate examination and a careful analysis of your medical records.

The "broken bones" program, proposed by our Centre, provides for the following multidisciplinary

protocol, designed to facilitate the process of healing from a fracture:

- 20-30 sessions of Hyperbaric Oxygen Therapy done in a 2.5/2.2 bar pressure environment, with the duration of 90 minutes per session and two daily sessions
- Expert physiatrical advice that will evaluate all aspects of physical and rehabilitative medicine
- Physiotherapy treatments and hydrokinetic-therapy (when possible and if deemed appropriate) according to costumed scheme defined and evaluated with the physiatrist
- Eventually, electro-stimulation sessions of FREMS (Frequency Rhythmic Electrical Modulation System)
- If necessary, tissue massage
- Magnet-therapy

In some cases, the physiotherapy treatment can be performed directly during the hyperbaric chamber session.

I hope this can help to answer your questions. For any further information and for logistic issues, do not hesitate to contact our office at 0544 500 152 .

I wish you the best of luck for a fast recovery.

Best wishes,

Dr. Andrea Galvani

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