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In this issue

Research Article

Open Access Research Article PTZAID:IJCMS-6-227

Prevalence of sexual dysfunction in a group of Obsessive-Compulsive Disorder (OCD) patients in Iran

Published On: October 10, 2019 | Pages: 089 - 093

Author(s): Firoozeh Raisi, Habibollah Ghassemzadeh*, Reihaneh Firoozi Khojastefar, Narges Karamghadiri, Alipasha Meysamie, Maryam Sorayani, Abbas Ali Nasehi, Jalil Fallah and Narges Ebrahimkhani

Objective: The main goal of this research is the assessment of sexual dysfunction in a group of OCD patients in Iran. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000127

Case Report

Open Access Case Report PTZAID:IJCMS-6-229

The Fleming Method for Tissue and Vascular Differentiation and Metabolism-Finding breast cancer in women with breast implants

Published On: December 18, 2019 | Pages: 097 - 098

Author(s): Richard M Fleming, Matthew R Fleming, Tapan K Chaudhuri and William C Dooley

Women with both dense breasts and breast implants present a special challenge for consideration due to the increased incidence of false-positives and false-negatives with mammography [1]. Molecular Breast Imaging [MBI] has provided limited proven benefit until recently, when improvements in camera calibration, enhancement and quantification [2,3], resulted in the abil ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000129

Open Access Case Report PTZAID:IJCMS-6-228

Endomyocardial fibrosis of the right ventricle

Published On: November 01, 2019 | Pages: 094 - 096

Author(s): Diego Sarre-Alvarez*, Cuitláhuac Arroyo-Rodríguez, Juan Manuel Chino-Mendoza, Yhaquelina Admeli Quispe-Villca, and Jose Antonio Arias-Godinez

Endomyocardial fi brosis is a rare cause of restrictive cardiomyopathy which predominates in lowincome population living in tropical areas. It´s characterized by endomyocardial fi brous tissue deposition causing restrictive physiology with poor prognosis without proper management. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000128

Open Access Case Report PTZAID:IJCMS-6-226

Critical intracranial hypertension of hidden etiology

Published On: September 18, 2019 | Pages: 087 - 088

Author(s): Gamiz-Gamiz A*, Abril-Molina A, Gomez-Luque JM, Saura Rojas E, Pastor-Rull J and Ocete-Hita E

Arachnoid cysts are central nervous system lesions that infrequently occur in childhood. They can be mobile and produce partial or complete obstruction in the Cerebrospinal Fluid (CSF) circulation. They are usually present at birth and are asymptomatic, although sometimes the symptoms appear in adolescence or adulthood due to the growth acceleration [1,2]. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000126

Clinical Image

Open Access Clinical Image PTZAID:IJCMS-6-225

Leiomyomatosis Peritonealis Dissiminata

Published On: August 27, 2019 | Pages: 086 - 086

Author(s): Hanne Christensen*

The leiomyomatosis peritonealis dissiminata (LPD) a histologically benign condition, but it can residivere and be metastatic. Since the macroscopically picture imitates diffuse peritoneal carsinosis, the risk of unnecessary drastic precautions are nearby. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000125

Open Access Clinical Image PTZAID:IJCMS-6-224

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-85

Published On: June 16, 2019 | Pages: 085 - 085

Author(s): Giselher Schalow*

The girl looks at you in the hope that you will help to cure spinal cord injury (and other diseases) in children. The picture was taken from the fairy tale film “Till Eulenspiegel”. In the film she (Jule Hermann) is hoping that her father wants her. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000124

Open Access Clinical Image PTZAID:IJCMS-6-223

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-84

Published On: June 16, 2019 | Pages: 084 - 084

Author(s): Giselher Schalow*

Poster of the Author Schalow G (Number 38) at the international conference IPBIS2018 in Belfast 2018: Pediatric acquired brain injury repair. The poster is not especially good because of lack of money. But the repair progress of the nervous system in children can clearly be seen It is also shown that human anatomy and physiology is needed for repair. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000123

Open Access Clinical Image PTZAID:IJCMS-6-222

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-83

Published On: June 16, 2019 | Pages: 083 - 083

Author(s): Giselher Schalow*

The SCI patient Nefeli during exercising only with the legs while playing/working with the iPhone (A) or singing and moving (B). While playing a bit crazy during CDT (B) is beneficial for repair because it keeps the patient in a good mood in spite of the SCI. Being addicted to the iPhone (A) is mostly not beneficial for repair. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000122

Open Access Clinical Image PTZAID:IJCMS-6-221

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-82

Published On: June 16, 2019 | Pages: 082 - 082

Author(s): Giselher Schalow*

Nefeli is watching the coordinated moving of the fins of fishes. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000121

Open Access Clinical Image PTZAID:IJCMS-6-220

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-81

Published On: June 16, 2019 | Pages: 081 - 081

Author(s): Giselher Schalow*

The spinal cord injury patient Nefeli during performing hula hoop and playing at the same time with the sister/Author with a balloon. B. Nefeli during hula hoop with two rings. C. With three rings, which was possible only for a few seconds. D,F,G. Nefeli during hula hoop and swinging additionally rings with the hands. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000120

Open Access Clinical Image PTZAID:IJCMS-6-219

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-80

Published On: June 16, 2019 | Pages: 080 - 080

Author(s): Giselher Schalow*

Running to improve pelvis positioning in a patient with a SCI at the level of Th10/11. A. During walking on knees, the pelvis is too much backwards mainly because of spasticity. B-E. During running the patient is able to bring the pelvis forward, especially in E. F. After running 10 times the distance of 6m the patient was exhausted but happy. Note that the patient is ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000119

Open Access Clinical Image PTZAID:IJCMS-6-218

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-79

Published On: June 16, 2019 | Pages: 079 - 079

Author(s): Giselher Schalow*

Improved running performance (A) of the SCI patient because of being able to flex and lift more the knees instead of swinging the leg outwards during walking (B) and running (C). ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000118

Open Access Clinical Image PTZAID:IJCMS-6-217

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-78

Published On: June 16, 2019 | Pages: 078 - 078

Author(s): Giselher Schalow*

Jumping on springboard of the 11-year-old SCI patient Nefeli after 2.5 years of CDT. Jumping in anti-phase (A-C), in rotation (D,E) and in abduction-adduction (F,G). ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000117

Open Access Clinical Image PTZAID:IJCMS-6-216

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-77

Published On: June 16, 2019 | Pages: 077 - 077

Author(s): Giselher Schalow*

Exercising on the special CDT device with coordinated support by the Author. The Author recognized with the left hand when Nefeli started to sweat in the leg first time after the SCI, which means that the sympathetic nervous system re-innervated the body below the injury level Th10. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000116

Open Access Clinical Image PTZAID:IJCMS-6-215

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-76

Published On: June 16, 2019 | Pages: 076 - 076

Author(s): Giselher Schalow*

The spinal cord injury patient Nefeli just after learning to ride a normal bicycle at an age of 12.5 years (A). She manages

also to ride curves (slalom) (B). She still has problems to keep the feet on the pedals, but when she slips from pedals, she has no problems to keep the balance (C). Note that she has to concentrate very much to keep the feet on the pedals (A), s ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000115

Open Access Clinical Image PTZAID:IJCMS-6-214

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-75

Published On: June 16, 2019 | Pages: 075 - 075

Author(s): Giselher Schalow*

Relearning to ride a bicycle (A-G) instead of riding wheel instruments in the lying position (H) of patients with spinal cord injury. In B the feet are fixed. In C Nefeli is demonstrating the improvement of trunk stability. In D through G the feet are not fixed. E. With support of the father, Nefeli can manage a bit to ride a normal bicycle. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000114

Open Access Clinical Image PTZAID:IJCMS-6-213

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-74

Published On: June 16, 2019 | Pages: 074 - 074

Author(s): Giselher Schalow*

Improvement of the low load coordination dynamics best values with therapy. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000113

Open Access Clinical Image PTZAID:IJCMS-6-212

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-73

Published On: June 16, 2019 | Pages: 073 - 073

Author(s): Giselher Schalow*

Natural standing of the SCI patient at school following 12 months of therapy (A). After 18 months of CDT she stands straighter during working in the kitchen (B). The patient prefers to be bare foot (B) or to wear socks to have more input from the soles of the feet for better balance because of the damage of the fasciculus gracilis. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000112

Open Access Clinical Image PTZAID:IJCMS-6-211

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-72

Published On: June 16, 2019 | Pages: 072 - 072

Author(s): Giselher Schalow*

Improvement of the straightness of the trunk during hula hoop. The treatment time is 12 months in A, 18 in C and 22 months in D. The improvement of straightness may not be characteristic for the improvement of her scoliosis. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000111

Open Access Clinical Image PTZAID:IJCMS-6-210

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-71

Published On: June 16, 2019 | Pages: 071 - 071

Author(s): Giselher Schalow*

Improvement of longest hula hoop exercising times in dependence on therapy. Note that the individual times varied much. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000110

Open Access Clinical Image PTZAID:IJCMS-6-209

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-70

Published On: June 16, 2019 | Pages: 070 - 070

Author(s): Giselher Schalow*

The arching of the back is impaired in the patient Nefeli (A). In the four-year-old brother the arch of the back is physiologic (B). ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000109

Open Access Clinical Image PTZAID:IJCMS-6-208

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-69

Published On: June 16, 2019 | Pages: 069 - 069

Author(s): Giselher Schalow*

Nefeli during dancing at school. Disappointing is that 16 of the 18 pupils had over-weight. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000108

Open Access Clinical Image PTZAID:IJCMS-6-207

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-68

Published On: June 16, 2019 | Pages: 068 - 068

Author(s): Giselher Schalow*

Foot arches during supported walking. Note the right foot has in the stance phase (A, arrow) no foot arch. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000107

Open Access Clinical Image PTZAID:IJCMS-6-206

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-67

Published On: June 16, 2019 | Pages: 067 - 067

Author(s): Giselher Schalow*

Practical judgment of extensor spasticity. When the Author holds the patient Nefeli (SCI Th10), one can judge her extensor spasticity by the extension of her legs (A). Her present spasticity is medium strong. A physiologic leg position can be seen in B. The healthy seven-year-old sister has no spasticity and the legs are flexed. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000106

Open Access Clinical Image PTZAID:IJCMS-6-205

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-66

Published On: June 16, 2019 | Pages: 066 - 066

Author(s): Giselher Schalow*

Therapy-induced spasticity reduction in the short-term memory. The position of the ball represents the state of the system and the potential well, the attractor. The ball is attracted to the stable position in the deepness of the hole, called attractor state. The attractor layout, consisting of two attractive states of different stability, is changing upon exercising ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000105

Open Access Clinical Image PTZAID:IJCMS-6-204

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-65

Published On: June 16, 2019 | Pages: 065 - 065

Author(s): Giselher Schalow*

Epigenetic regulation for repair by movement-based learning. CDT-induced stimulation of the pathways that regulate neural network repair is a proven therapeutic and preventive tool. Epigenetic mechanisms, stimulated by physiologic network activation, are likely key players within signaling networks, as DNA methylation, chromatin remodeling and small non-coding RNAs su ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000104

Open Access Clinical Image PTZAID:IJCMS-6-203

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-64

Published On: June 16, 2019 | Pages: 064 - 064

Author(s): Giselher Schalow*

Zones of Head and referred pain. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000103

Open Access Clinical Image PTZAID:IJCMS-6-202

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-63

Published On: June 16, 2019 | Pages: 063 - 063

Author(s): Giselher Schalow*

Ten-year-old Nefeli can move again the big toe separately four years after the accident and following 10.5 months of coordination dynamics therapy. In A she does not activate foot muscles and is relaxed. In B,C she concentrates and visualizes the task to activate the dorsal flexion of the big toe, which indicates that the spinal cord repair has reached with the activa ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000102

Open Access Clinical Image PTZAID:IJCMS-6-201

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-62

Published On: June 16, 2019 | Pages: 062 - 062

Author(s): Giselher Schalow*

Ten-year-old Nefeli can move again the big toe separately four years after the accident and following 10.5 months of coordination dynamics therapy. In A she does not activate foot muscles and is relaxed. In B,C she concentrates and visualizes the task to activate the dorsal flexion of the big toe, which indicates that the spinal cord repair has reached with the activa ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000101

Open Access Clinical Image PTZAID:IJCMS-6-200

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-61

Published On: June 16, 2019 | Pages: 061 - 061

Author(s): Giselher Schalow*

The 10-year-old SCI patient Nefeli during training with the hula hoop to improve trunk mobility/stability and balance. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000100

Open Access Clinical Image PTZAID:IJCMS-6-199

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-60

Published On: June 16, 2019 | Pages: 060 - 060

Author(s): Giselher Schalow*

The patient with a SCI learned to lift the knees and strike the ground first with the heel to induce the stepping automatism for SCI repair. Note, the arch of the foot is preserved in the left foot but not in the right foot during the stance phase. With the lifting of the knees, Nefeli became able to activate the quadriceps much more; the regeneration of the spinal co ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000099

Open Access Clinical Image PTZAID:IJCMS-6-198

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-59

Published On: June 16, 2019 | Pages: 059 - 059

Author(s): Giselher Schalow*

Improvement of running and walking times when moving along a floor. The patient is using the arms also for keeping the balance. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000098

Open Access Clinical Image PTZAID:IJCMS-6-197

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-58

Published On: June 16, 2019 | Pages: 058 - 058

Author(s): Giselher Schalow*

Sclerotomes (B) and Dermatomes (A). ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000097

Open Access Clinical Image PTZAID:IJCMS-6-196

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-57

Published On: June 16, 2019 | Pages: 057 - 057

Author(s): Giselher Schalow*

Coordination dynamics values over time of the SCI patient Nefeli. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000096

Open Access Clinical Image PTZAID:IJCMS-6-195

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-56

Published On: June 16, 2019 | Pages: 056 - 056

Author(s): Giselher Schalow*

Patient with SCI during exercising on the special CDT device different movement patterns to improve phase and frequency coordination of neuron firing. In A and B also trunk rotation is trained. When turning in the standing position (F), the performance of the right foot is pathologic (plantar flexed). ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000095

Open Access Clinical Image PTZAID:IJCMS-6-194

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-55

Published On: June 16, 2019 | Pages: 055 - 055

Author(s): Giselher Schalow*

Two ways to get up from the floor after falling. In A through D mainly the arms are used for getting up and in E through H the legs. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000094

Open Access Clinical Image PTZAID:IJCMS-6-193

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-54

Published On: June 16, 2019 | Pages: 054 - 054

Author(s): Giselher Schalow*

Volitional dorsal flexion of the feet in a patient with 70% SCI. In ‘A’ plantar flexed and in ‘B’ dorsal flexed. To improve foot power, the hand grip is co-activated (clench her fists). ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000093

Open Access Clinical Image PTZAID:IJCMS-6-192

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-53

Published On: June 16, 2019 | Pages: 053 - 053

Author(s): Giselher Schalow*

Automatic stepping in a newborn infant. A. The 5-day-old infant, Juliane, performing primary automatic stepping; slight backward posture. The heel of the right foot touched the ground first. B. Infant Juliane, 8-day-old, performing automatic stepping. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000092

Open Access Clinical Image PTZAID:IJCMS-6-191

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-52

Published On: June 16, 2019 | Pages: 052 - 052

Author(s): Giselher Schalow*

In spite of all the struggles the Author had with the patient Nefeli when pushing her to the limits of exercising, she wrote into the control book that she likes the Author. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000091

Open Access Clinical Image PTZAID:IJCMS-6-190

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-51

Published On: June 16, 2019 | Pages: 051 - 051

Author(s): Giselher Schalow*

Supported jumping in anti-phase of the 9.5-year-old Nefeli with SCI in comparison to other girls. Note, with the right small finger the therapist (Author) is trying to keep the right foot of Nefeli in a physiologic position. The progress in jumping is quantified by the increase of jumps per series. y = age in years. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000090

Open Access Clinical Image PTZAID:IJCMS-6-189

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-50

Published On: June 16, 2019 | Pages: 050 - 050

Author(s): Giselher Schalow*

Free walking on treadmill in the forward and backward direction of a patient with a SCI. Note the pathologic inward rotation of the left knee and the not straight upper body because of the scoliosis. ...

Abstract View | Full Article View | DOI: 10.17352/2455-8702.000089

Open Access Clinical Image PTZAID:IJCMS-6-188

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-49

Published On: June 16, 2019 | Pages: 049 - 049

Author(s): Giselher Schalow*

Improvement of free walking on treadmill of the 10-year-old patient Nefeli with a SCI. At the beginning a walking speed of

2.5km/h was only possible, later on a speed of 4km/h became possible. The patient walked without shoes to have a better sensory input and in this way a higher stability, which was the limiting factor of continuous walking. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000088

Open Access Clinical Image PTZAID:IJCMS-6-187

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-48

Published On: June 16, 2019 | Pages: 048 - 048

Author(s): Giselher Schalow*

Improvement of urinary bladder functioning quantified by the time from the urge/desire to void until micturition. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000087

Open Access Clinical Image PTZAID:IJCMS-6-186

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-47

Published On: June 16, 2019 | Pages: 047 - 047

Author(s): Giselher Schalow*

The girl Nefeli, who acquired a spinal cord injury at the levels Th10/11 during walking with sticks and free walking. Note the pathologic walking pattern in B. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000086

Open Access Clinical Image PTZAID:IJCMS-6-185

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-46

Published On: June 16, 2019 | Pages: 046 - 046

Author(s): Giselher Schalow*

The six-year-old Nefeli (sitting), who acquired a spinal cord injury, following 8-months-therapy in a rehabilitation center in Affoltern in Switzerland (one day costs approximately 2000 US Dollar). Note, Nefeli had problems to manage at school in the first class. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000085

Open Access Clinical Image PTZAID:IJCMS-6-184

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-45

Published On: June 16, 2019 | Pages: 045 - 045

Author(s): Giselher Schalow*

Severe scoliosis of the SCI patient Nefeli caused by the spinal cord injury and the cancer removal. With the removal of the neuroblastoma at least one intercostal was removed. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000084

Open Access Clinical Image PTZAID:IJCMS-6-183

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-44

Published On: June 16, 2019 | Pages: 044 - 044

Author(s): Giselher Schalow*

A. Posterior funiculus, containing the posterior columns fasciculus gracilis (medial, afferent fibers from the leg) and fasciculus cuneatus (lateral, afferent fibers from the arm). Afferent fibers sub-serving different sensory modalities traverse the root entry zone and enter the posterior horn (B). The type of myelin changes from peripheral to central, and the myelin ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000083

Open Access Clinical Image PTZAID:IJCMS-6-182

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-43

Published On: June 16, 2019 | Pages: 043 - 043

Author(s): Giselher Schalow*

Neuron operating as a coincidence or coordination detector. A. Afferent input is reaching rather uncoordinated the cell soma. Only sometimes an action potential is generated, because the threshold of action potential generation is mostly not achieved. B. The action potentials in fibers 1 through 4 are reaching time-coordinated the dendrites or the cell soma. The posts ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000082

Open Access Clinical Image PTZAID:IJCMS-6-181

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-42

Published On: June 16, 2019 | Pages: 042 - 042

Author(s): Giselher Schalow*

Up and down movements of the trunk to arch the patient's back and to activate neurogenesis at the SCI level Th10. The impaired arch is marked with SCI Th10. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000081

Open Access Clinical Image PTZAID:IJCMS-6-180

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-41

Published On: June 16, 2019 | Pages: 041 - 041

Author(s): Giselher Schalow*

Spinal cord cross section with indicated approximate injury (cross-hatched) and loss of interneuron (dotted area) of the patient Nefeli. Synapses of descending motor tracts onto anterior horn neurons are shown. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000080

Open Access Clinical Image PTZAID:IJCMS-6-179

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-40

Published On: June 16, 2019 | Pages: 040 - 040

Author(s): Giselher Schalow*

Primary motor areas (homunculus of the brain). Note that the toes are close to urinary bladder and rectum areas. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000079

Open Access Clinical Image PTZAID:IJCMS-6-178

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-39

Published On: June 16, 2019 | Pages: 039 - 039

Author(s): Giselher Schalow*

A-C. Volitional abduction and adduction of the toes becomes possible again in the SCI patient Nefeli. With the activation of the Mm. interrossei dorsales and plantares (C), the regeneration of the spinal cord has reached the S1 to S3 spinal cord segments. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000078

Open Access Clinical Image PTZAID:IJCMS-6-177

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-38

Published On: June 16, 2019 | Pages: 038 - 037

Author(s): Giselher Schalow*

Activation of the halluces longus muscle (C) when dorsal flexing the big toes separately (B). Spinal cord regeneration reached the L5 level. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000077

Open Access Clinical Image PTZAID:IJCMS-6-176

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-37

Published On: June 16, 2019 | Pages: 037 - 037

Author(s): Giselher Schalow*

Segment-indicating muscles of the L4, L5, S1, S2/S3 and S4/S5 spinal cord segments for measuring the level of spinal cord regeneration. A. Relation between spinal cord and vertebra segments. B. The spinal cord segment L4 indicating muscle is for example the quadriceps. The extensor halluces longus is characteristic for the L5 segment. C. The plantar muscles of the foo ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000076

Open Access Clinical Image PTZAID:IJCMS-6-175

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-36

Published On: June 16, 2019 | Pages: 036 - 036

Author(s): Giselher Schalow*

MRI of the 10-year-old patient Nefeli with a spinal cord injury at the levels around Th10. Because of scoliosis, the spinal

cord is not fully in the plane. The injury of the spinal cord is mainly from the dorsal site. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000075

Open Access Clinical Image PTZAID:IJCMS-6-174

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-35

Published On: June 16, 2019 | Pages: 035 - 035

Author(s): Giselher Schalow*

Salamander-crawling (C, D) in similarity salamander-walking (A, B) of the 10-year-old Nefeli with a spinal cord injury (Th10). In D the bending is disturbed because of the scoliosis and spasticity. ...

Abstract View Full Article View DOI: 10.17352/2455-8702.000074

Open Access Clinical Image PTZAID:IJCMS-6-173

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-34

Published On: June 16, 2019 | Pages: 034 - 034

Author(s): Giselher Schalow*

A, B. Possible rotational body movement of Tiktaalik, caused by alternately using one front limb for forward locomotion. C, D. This front limb movement is simulated by a patient with a spinal cord injury (Nefeli) by using alternately the right and left arm. Tiktaalik roseae is a lobe-finned fish from the late Devonian period, about 375 million years ago, having may be ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-33

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Author(s): Giselher Schalow*

Ten-year-old patient with an incomplete spinal cord injury at the Th10 level during creeping. Note, because of the severe scoliosis, the creeping is not symmetrical. The rotation to the left is limited because of the scoliosis. C. Training of right-left symmetry via the corpus callosum (D) when exercising on the special CDT device with crossed arms. ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-32

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Author(s): Giselher Schalow*

The 5.5-year-old Nefeli after suffering an incomplete spinal cord injury Th10 by medical malpractice. B. Nefeli after eight months of conventional children rehabilitation in Switzerland (Affoltern). Sticks and orthosis were needed. C,D. Ten-year-old patient Nefeli after six months of coordination dynamics therapy. At school she can walk again and can write at the whit ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-31

Published On: June 16, 2019 | Pages: 031 - 031

Author(s): Giselher Schalow*

Evolution of the attractor layout of bladder functioning induced by learning transfer from movements to bladder functions upon CDT. The region around each local minimum of the potential landscape acts like a well that weekly traps the system into a coordinated state. Black balls correspond to stable minima of the potential. With learning, the pattern ‘spasticity of th ...

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Open Access Clinical Image PTZAID:IJCMS-6-169

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-30

Published On: June 16, 2019 | Pages: 030 - 030

Author(s): Giselher Schalow*

Direct comparison of secondary muscle spindle afferent activity and motoneuron activity between the brain-dead human HT6 with a synergy of the bladder (A) and the paraplegic 9 with a dyssynergia of the bladder (B). A. Simultaneous measurements of activities of secondary muscle spindle afferents (a), parasympathetic preganglionic motoneurons (b) and oscillatory firing ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-29

Published On: June 16, 2019 | Pages: 029 - 029

Author(s): Giselher Schalow*

Comparison between changes in secondary muscle spindle afferent activity and detrusor pressure (measured before the surgery; for the implantation of a sacral anterior root stimulator). Paraplegic 9. A. Activity changes of the afferent fiber SP2(1) following bladder catheter pulling (Figure 37Ba). Approx. mean activity level is represented by a dashed line at 7.5 IIs/ ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-28

Published On: June 16, 2019 | Pages: 028 - 028

Author(s): Giselher Schalow*

Self-organization of premotor spinal *2-oscillator O1, which innervates the external urinary bladder sphincter (skeletal muscle). Brain-dead human HT6; recording from a dorsal S4 nerve root. A. Recordings from *2-motoneurons O1 and O2, firing in the oscillatory mode with impulse trains of 2 (upper recording) and 3 (lower recording) action potentials (APs). The duratio ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-27

Published On: June 16, 2019 | Pages: 027 - 027

Author(s): Giselher Schalow*

Location of receptors and muscles for the continence of the urinary bladder and the rectum, innervated by motoneurons the activities of which were recorded, in the brain-dead human HT6 (dS4 root), paraplegic 9 (vS4 root) and paraplegic 7 (nerve root S5). ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-26

Published On: June 16, 2019 | Pages: 026 - 026

Author(s): Giselher Schalow*

Schematic diagram of the sympathetic and parasympathetic nervous system. Yellow = sympathetic, blue = parasympathetic. The recording from a sacral root shows single action potentials of preganglionic neurons (par) and a skin afferent fiber. ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-25

Published On: June 16, 2019 | Pages: 025 - 025

Author(s): Giselher Schalow*

Clinical urinary bladder function test (Urodynamics). Improvement of the urinary bladder functions, quantified by urodynamics in a 30-year-old female patient. A. 3 months after the accident resulting paraplegia sub Th12 following spinal cord lesion. B. 12 months after the accident (lesion level lowered to sub L3). In A, the detrusor pressure (Pdet) is generated by the ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-24

Published On: June 16, 2019 | Pages: 024 - 024

Author(s): Giselher Schalow*

Relation of coordination dynamics values to therapy duration for a load of 20N and for exercising in the forward (lines and dots) and backward directions (20Nb; dashed line and crosses) in a patient with a SCI sub C5/6 (Kadri). Note that with no therapy the coordination dynamics values got worse (increased) and upon therapy they improved again. Upon metal removal the ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-23

Published On: June 16, 2019 | Pages: 023 - 023

Author(s): Giselher Schalow*

Comparison between the development of an infant and repair of a cervical spinal cord injury upon CDT. Left penal, positioning upon 0.5 years of therapy and right penal after 5 years of therapy. ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-22

Published On: June 16, 2019 | Pages: 022 - 022

Author(s): Giselher Schalow*

Comparison between development and the repair of an almost complete cervical spinal cord injury upon one year (A,C,G) (therapy started at an age of 15.5 years) and 5 years of coordination dynamics therapy (B,E,H) (CDT started with 17 years). The MRI of the SCI of the patient of the left panel is shown in 'I' and those one of the right panel in 'K'. Trunk rotation (A,B ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-21

Published On: June 16, 2019 | Pages: 021 - 021

Author(s): Giselher Schalow*

Relation of coordination dynamics values to therapy length for increasing load between 20 and 150N. The loads for forward exercising (dots, 20N, 100N, 150N) are marked at the curves (20Nb = backward exercising (crosses) at 20N). Note that with no therapy the coordination dynamics values got worse and upon administering therapy again the values improved again even 2 ye ...

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Open Access Clinical Image PTZAID:IJCMS-6-159

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-20

Published On: June 16, 2019 | Pages: 020 - 020

Author(s): Giselher Schalow*

Improvement of times for running 60 and 400m (A,B) and increase of jumps with a skipping-rope per single session (C) in relation to on-going therapy sessions. Therapy period = second half of 2006 (Next PDF No 160). ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-19

Published On: June 16, 2019 | Pages: 019 - 019

Author(s): Giselher Schalow*

The outcome of a SCI repair depends strongly on the severance of the injury. A-D. MRI's of approximately 99, 95 and 50% injury. C shows the 50% injury with titan fixation and B without. The severance of an injury can also be estimated with a fixation in place. G,H. In 50% injury, the patient can relearn walking, running and jumping. E,F. In 95% (and 99%) the patient c ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-18

Published On: June 16, 2019 | Pages: 018 - 018

Author(s): Giselher Schalow*

A. Improvement of high-load coordination dynamics (CD) values in a patient with severe brain injury upon coordination dynamics therapy for several years. The high-load CD values were obtained by summing up the single CD values for forward and backward exercising, (high-load CD value) = 20N + 50N + 100N + 150N + 200N + 150N + 100N + 100N + 50N + 20N + 20N). ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-17

Published On: June 16, 2019 | Pages: 017 - 017

Author(s): Giselher Schalow*

Layout for measuring coordination dynamics (arrhythmicity of exercising) between arm and leg movements, displayed on the laptop; for the intermediate coordination's between pace and trot gait, the fluctuation of the network states is larger. The recording of sEMG activity (displayed on the oscilloscope) from the tibialis anterior and other muscles is also shown. The i ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-16

Published On: June 16, 2019 | Pages: 016 - 016

Author(s): Giselher Schalow*

The 11-year-old Nefeli with an incomplete spinal cord injury (SCI) during exercising coordinated arm, leg and trunk movements to improve the coordinated firing of neurons and sub-neural networks. This special CDT device for measuring and therapy (int.pat.) is produced by the firm: Giger Engineering, Martin Giger dipl.Ing.ETH/SIA, Herrenweg 1, 4500 Solothurn, Switzerla ...

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Open Access Clinical Image PTZAID:IJCMS-6-154

Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-15

Published On: June 16, 2019 | Pages: 015 - 015

Author(s): Giselher Schalow*

The potential, V(), of the coordination dynamics for jumping on springboard (D, Nefeli) of a healthy (A) and injured CNS (B,C). The region around each local minimum acts like a well that weakly traps the system into a coordinated state. Behavioral changes are represented by the over-damped movement of a rolling ball in the potential “landscape”. High fluctuations (in ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-14

Published On: June 16, 2019 | Pages: 014 - 014

Author(s): Giselher Schalow*

Trot gate crawling of a cerebral palsy girl in interpersonal coordination with the therapist. The crawling performance of the therapist is not optimal. The right arm is leading with respect to the left knee. The crawling performance of the patient is also not optimal; the knees are too much apart. ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-13

Published On: June 16, 2019 | Pages: 013 - 013

Author(s): Giselher Schalow*

Motor program bursts in patients who suffered a spinal cord injury, structured with clonus activation and rhythmic firing of FF-type motor units A. EMG recording of a clonus (f = 5.3Hz) in the right tibialis anterior muscle of a patient who suffered a complete spinal cord injury sub Th5/7; the patient was not exercising. B, C. Motor programs of a patient who suffered ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-12

Published On: June 16, 2019 | Pages: 012 - 012

Author(s): Giselher Schalow*

Phase and frequency coordination between oscillatory firing motor units (FF-type) during the generation of a motor program during exercise on the special coordination dynamics therapy device at loads increasing from 100 to 200N. Oscillation periods (T) and oscillation frequencies (f [Hz]) of oscillatory firing motor unit 1 are partly indicated. ‘A,B,D,E’ same recordin ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-11

Published On: June 16, 2019 | Pages: 011 - 011

Author(s): Giselher Schalow*

Correlation of muscle fiber types, motor nerve fiber types, and oscillatory firing spinal neuronal networks, based on histochemical, morphological and physiological properties. This figure provides a simplified correlation between muscle fiber, motoneuron and sacral oscillator types. No additional subtypes have been included. = motoneuron, 1, 2 = dynamic and stati ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-10

Published On: June 16, 2019 | Pages: 010 - 010

Author(s): Giselher Schalow*

Touch (and pain)-stimulated afferent activity. Touch and pain activity, stimulated by pin-prick (A) and touch (Ea) of S5 or Co dermatomes and recorded extracellularly from a dorsal coccygeal root (brain-dead human HT6). T1, T2, T3, T4, P = mark action potentials (APs) from single touch and pain fibers. Subscripts 1, 2, 3 mark single fibers. ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-9

Published On: June 16, 2019 | Pages: 009 - 009

Author(s): Giselher Schalow*

Classification scheme for human peripheral nerve fibers. Conduction velocities (V) and nerve fiber diameters (Ø) of afferent and efferent nerve fiber groups in normal humans and in patients with a traumatic spinal cord lesion for 0.5 to 6 years. The splitting of the 1-motoneurons into the 3 subgroups, 11, 12, 13, has not yet been confirmed. This is the only existi ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-8

Published On: June 16, 2019 | Pages: 008 - 008

Author(s): Giselher Schalow*

Development of a classification scheme for human peripheral nerve fibers. Conduction velocities (V) and nerve fiber diameters (Ø) of afferent and efferent nerve fiber groups in normal humans and in patients with a traumatic spinal cord injury for 0.5 to 6 years. ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-7

Published On: June 16, 2019 | Pages: 007 - 007

Author(s): Giselher Schalow*

Schematic splitting of the activity of several nerve fibres into simultaneous impulse patterns of single fibres by comparing waveforms, conduction velocities and reoccurring characteristic impulse patterns (rhythmic firing of sphincteric motoneurons). The different conduction times and waveforms were recognized on an expanded time scale. Stretch receptor and secondary ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-6

Published On: June 16, 2019 | Pages: 006 - 006

Author(s): Giselher Schalow*

Layout of the recording of single-nerve fiber action potentials to measure the self-organization of neuronal networks of the human CNS under physiologic and pathophysiologic conditions. By recording with two pairs of wire electrodes (B) from sacral nerve roots (cauda equina, C), containing between 200 and 500 myelinated nerve fibers, records were obtained in which sin ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-5

Published On: June 16, 2019 | Pages: 005 - 005

Author(s): Giselher Schalow*

Cervical spinal cord injury of an 18-year old man approximately 8 hours after a motor cycle accident (A) and one year later (B). ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-4

Published On: June 16, 2019 | Pages: 004 - 004

Author(s): Giselher Schalow*

Caudal part of the human spinal cord from the dorsal side. Lig. dent. = denticulate ligament. Dissection of the Author. ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-3

Published On: June 16, 2019 | Pages: 003 - 003

Author(s): Giselher Schalow*

Human spinal cord with dorsal (A) and ventral side (B,C). Intumescentia cervicalis and lumbosacralis are visible. The caudal ventral roots are thinner than the dorsal roots. The passage of the artery spinalis magna (Artery of Adamkiewicz) and the anterior spinal artery are indicated. The C5 and Th10 roots and the intercostal nerve Th12 are indicated. Dissection of the ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-2

Published On: June 16, 2019 | Pages: 002 - 002

Author(s): Giselher Schalow*

Spinal cord (A) and dermatome segments (B-D). The segmental innervation of the skin in B is according to Hansen-Schliack and in C after Keegan and Garret. The overlap of dermatomes (D) is according to Foerster. Note the different location of the T1 dermatome in B and C. There is variation of the segmental skin innervation especially in the lower sacral range. ...

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Exclusive Image Gallery on Human Spinal Cord Regeneration-Clinical Image-1

Published On: June 16, 2019 | Pages: 001 - 001

Author(s): Giselher Schalow*

A. Spinal cord segments and their relation to the vertebral bodies. Note the Ascensus of the spinal cord, giving rise to the long cauda equina nerve roots. B. Approximate segmental innervation of the skin. C. Below the spinal cord injury level there is loss of sensitivity and loss of connectivity to muscle and other functions. ...

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