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Almansoor, Sara Mohammed, SAUDI-ARABIA

Neurological Hospital
Depart. for Neurological and clinical Neurophysiology
Speciality
- Parkinson-Syndrome
- Movement disorders

Chief Physician:
Prof. Dr. A. Ceballos-Baumann

Munich,
July, 3rd 2018

Dear Colleagues,

We report on our common patient, Ms. **ALMANSOOR, Sara Mohammed,** born on **03/05/1988**, who was in our inpatient treatment for further rehabilitation of the phase C from **16/04/2018** until **30/06/2018.**

Diagnoses:
Traumatic brain injury after traffic accident 06/2011 with
- Contusion bleeding on both sides of the head
- Subarachnoid hemorrhage on the right parieto-occipital
- Contusion in the left basal ganglia on the right temporo-parietal and in the left cerebellar peduncle and in the corpus callosum

Condition after osteotomy in the femur on both sides at the age of about 15 years

Medical History:
Ms Almansoor had a traffic accident on 12/06/2018 with contusion bleeding on both sides of the head, subdural haemorrhage on the right parieto-occipital, retrospective lesions in the left cerebellar peduncle, left basal ganglia and parieto-temporal right side and corpus callosum.
In addition, a fracture in the area C5 / C6 / C7 transversus was diagnosed in a spinal CT scan, as well as a fracture of the sacrum and the left ischial bone. There was a respiration, in January 2012, a successful Weaning could be performed, so that the patient could breathe spontaneously and also an oral supply was possible. Due to a spastic tetraparesis, a treatment with baclofen had to be performed at least temporarily. Treatment with botulinum toxin has been considered but not performed.
At least an epileptic seizure probably occurred in the course of the post-traumatic episode. In 2017, at least one antiepileptic treatment with Tegretol (carbamazepine?) 100 mg 3 times a day is listed. According to the family, about 2 years post traumatic a start of movements began and about 2 1/2 years after the trauma came walking on a rollator was possible.
Currently on admission, the patient and relatives report the following symptoms: balance disorders, walking on the rollator very unsafe over short distances independently, fine motor skills significantly impaired, especially the selective control of the individual fingers is difficult. It comes to memory disturbance with repetition of questions, etc. and in particular difficulties in understanding complex requirements.
There is a clear dysarthria, safe drive disorder does not exist. There is an intermittent bladder incontinence, especially at night, but also in part during the day. The mood is described as largely good with occasional depressive phases, no clear bowel movement incontinence

Social history
The patient was a teacher in Saudi Arabia, in elementary school, where she taught art. She is single and lives with her parents.

Subjective therapy goals:
1.) Free walking without rollator
2.) recovery memory function
3.) Assessment of the need for a VP shunt and treatment with BTX

Clinical and other findings

Intemal findings:
Cor: pure, regular heart sounds. Pulmo: Vesicular breath sound. Abdomen: Soft, no pressure drought, bowel sounds in all 4 quadrants.

Neurological findings:
No meningism, visual field without deficits, isocorie, light reaction + / +, oculomotor with adduction disorder of the right eye, right-sided swelling of the mouth, no facial sensory disturbances indicated, high-grade dysarthrophonia. Motor: Upper right extremity right-sided moderate paresis, marked fine motor impairment right-sided, at the lower extremities bilateral spastic paresis incomplete, muscle reflexes left-emphasized. Hemiataxia on the left side, walking is possible on the high rollator with support independently, clearly disturbed postural stability. Finger nose experiment clearly on the left side atactic, also knee-heel experiment left-sided clearly atactic.

Psychological findings:
Time-oriented, no indication of disturbance of perception, ego-disorder or disturbance in content, no definite depressive mood currently.

Microbiology finding from 24/04/2018
Microbiological final findings
Material: Midstream urine
Requested examination:
Pathogenic germs
Pathogen detection:

Germ 1	germs of physiological
Urethralflora	
Cultural findings:	
Total germ count	10exp2 10exp3 CFU ml
antimicrobial agents	negative

24/04/18 10:28
With kind, collegial regards
validated by: Dr. J. Sledziona Attending Prof. Dr. Heike Freidnak

Apparative diagnostics

<u>OSB consultation from 17/04/2018:</u>
At primary inspection, already no safe indication for botulinum toxin injection. Danger of loss of function due to induced paresis outweighs possible, low passing functional gain.

<u>ECG from 17/04/2018:</u>
Sinus rhythm, heart rate 83 / min., Type of indifference, regular R-progression, no disturbances of arousal.

EEG rest derivation from 19/04/2018:
Findings: Low-amplitude alpha basal activity, reminiscent transition to generalized theta activity with some higher amplitude spindles. Inconstantly embedded delta groups on the right fronto-temporal. No evidence of ETPs.
Assessment: Mild diffuse brain dysfunction and regional brain dysfunction right fronto-temporal.

Urology, urological consultation of 23/04/2018:
Findings: No urological examination yet, no therapy. Diuria during the day about half-hourly; Lingering was more possible, sometimes even alguria. Nocturia unexplainable - diapering. Defecation daily. is felt, mostly emptying in the toilet
Finding: abdomen soft, pressure pain suprapubic a-gene: Virgo int. Very narrow meatus urethrae ext; DRU without findings.
U Stix (Katneterurin) Microhematuria otherwise without findings.
Sono
Kidney right kidney very small (8.7 cm, left 9.7 cm kidney values without findings) bladder empty at micturition recently uterus with high constructed endometrium, small cystic structure right next to the uterus (ovary?)
Assessment: N-OAB wet (suprapontine lesion), no residual urine formation: Meatus tightness
Recommendation: Recommend to increase trospium chloride 3x15mg if necessary.
Videourodynamics Cysterthermoscopy
if necessary Meatusdilatation indicated. Please re-presentation in the course (in about 2 weeks)

Urology, Urological consultation from 14/05/2018:
Findings: Under 3x15mg Trospium chloride Urologic symptoms greatly improved: Micturition during the day only 3 hours; Nocturia max. 2x, no urge incontinence
Bowel movements not daily.
Sono bladder after targeted, arbitrary voiding: 80 ml
Assessment: Satisfactory subjective micturition situation; minimal residual urinary retention with anticholinergic medication.
Recommendation: It is possible to change the administration of trospium chloride to a single dose: Urivesc ret 60mg (equivalent to 45mg).
Please Macrogol daily: the patient is also trying to increase the drinking quantities.

Therapy areas

Occupational Therapy
Compared to the beginning of her stay, Ms A.'s extensive attacks of ache and grasp are increasingly possible with both upper extremities, while in the left upper extremity the movements are still atactic; In-hand manipulation in the left hand is still more difficult in the comparison, but small objects can be grasped and released in both hands. Change of position such as getting up as well as the transfer, take place with a light motoric protection of an auxiliary person

Voice and speech therapy
Ms. Almansoor has made tremendous progress in respiratory, speech and voice functions over the treatment period. So especially her family and friends on the phone can understand her a lot better. Speech has become more understandable and natural by improving facial symmetry. When smiling, Ms. Almansoor also feels much more beautiful. Through targeted exercises to improve the tongue and tongue movement, Ms Almansoor can also drink a little faster and swallowed less frequently. Even strangers can understand Ms Almansoor much more on a sentence level, but because of the still severe dysarthria very often the help and translation on the part of the family members are still needed.

Physical therapy
Mrs. Almansoor took part in the therapy very motivated. In the course of the therapy showed significantly improved equilibrium performance, both in the state and when walking on the high Rollator.Transfers is coped independently under supervision. In the gait pattern continues to show due to the stretch spastic left a significant genu recurvatum of the knee joint, which can now be better controlled by the patent. A splint was not effective because of the spasticity. The slightly atactic component in the gait pattern has also improved significantly, so that walking on the high rollator is safer, but supervision is still necessary (lack of concentration, with prolonged exposure). There were also exercises to build up the strength of the hip extensors and abductors as part of a mat program and training in medical training therapy, Further physiotherapy in the home country is urgently recommended.

Therapy and progress

Acute inpatient course, complications and intercurrent diseases:
We made a critical review of the cerebral imaging available to us after the question was asked about the option of CSF shunting or the placement of a VP shunt. We do not see any indication for this. Furthermore, in the context of electroencephalographic diagnostics, potentials typical for epilepsy were looked for, after it had apparently come to an antiepileptic therapy in advance. It showed only a diffuse brain dysfunction and a right, frontotemporal located regional dysfunction; thus no indication of antiepileptic treatment. An indication for any botulinum toxin therapy was not seen after extensive status assessment. In addition to bladder emptying disorders with significantly increased urinary urgency / urinary incontinence, after consultation with our urological consultant, treatment with Trospiumchlond in a dose of 3 × 15 mg was started, which led to an improvement in urge incontinence. Ultimately, however, due to the potential negative impact of this drug on cognition and constipation, a switch to Mirabegron. Both drugs resulted in a clear improvement in the urge incontinence of the patient. A good bowel movement regulation could be achieved, even with the additional administration of macrogol. After the end of the treatment with difficult disease acceptance with repeatedly depressive breakthroughs came (at no time suicidality), we started from 21/06/2018 treatment with the antidepressant sertraline. In this regard, a phase of 14 days to the onset of the drug should be considered.

Neurorehabilitation:
In this regard, we also refer to the above therapy reports. In summary, there was a very positive dynamic in almost all therapeutic areas. The extremely high motivation for therapy and support of the family led to a good therapeutic result. Significant progress has been made in the area of coordination control and atactic left extremity. The patient gained considerable safety on the high rollator. In the field of speech therapy, improvements were achieved with respect to the articulation by activating the soft palate as well as the breathing well. Under tactile guidance, a deepening of inspiration was possible. Hereunder short phases could be spoken clearly and clearly. However, there were still deficits in the area of stress patterns and comprehensibility in the spontaneous conversation.

Further measures and aftercare
1. We recommend a continuation of the physiotherapy and speech therapy. Also, occupational therapy in the further course makes sense. The following institutions seem to make sense:

Sultan Bin Abdulaziz Humanitarian City, King Fahd, Banban Riyad 13567 Saudi Arabia

Outpatient Clinic - King Fahad Medical City. As Sulimaniyah, 2642, Riyadh 12231, Saudi Arabia

General Authority of Sports, A1 Jamiah St. Al Malaz, Riyadh, 12641, Saudi Arabia

2. A renewed interval rehab in about 1 year (**preferably starting June 10, 2019**) in our house is highly recommended, especially the high level of therapy motivation, the very good momentum and the support of the family allow further improvement within the frame of an interval -Rehab accept.

3. With regard to depressive breakthroughs and more difficult disease acceptance, we recommend a follow-up evaluation with sertraline; if necessary, a dose adjustment should be made.

Recommendations Therapy

Occupational Therapy

Sensomotoric / perceptive treatment to improve the possibilities of self-care

Voice and speech therapy

It is urgently recommended the high-frequency continuation of dysarthria therapy, especially as Ms. Almansoor has always enthusiastically and extremely motivated in the therapy participated

Physical therapy

- Focus is on strengthening the hip abductors and extensors especially the left UEX
- Improvement of knee stability in mid-stance left to reduce genu recurvatum
- Locomotion training on the high walker with the goal of independent walking with aids, currently still fall due to lack of attention
- Training of all balance achievements

Medication:

Medication / Unit	**Substance**	**morning**	**noon**	**evening**	**night**
Macrogol/Movicol Pul 13.81 g/Btl. (piece)	Macrogol / Movicol	1.00-07:00			
Mirabegron ret. / Betmiga Tbl 50mg (piece)	Mirabegron ret. / Betmiga	1.00-07:00			
Sertralin / Zoloft Tbl 50mg (piece)	Sertralin / Zoloft	1.00-07:00			

Given daily requirement of above-mentioned medication ■

Regulations

No regulations were issued

With kind collegial regards,

Prof. Dr. A. Ceballos-Baumann
Chief Physician

Dr. H. Voss
Specialist for Neurology

Dr. med. M. Messner
Attending