**Academic Teaching Hospital of the  
 Ludwig-Maximilians Univerity Munich**

Mr.  
Dr. med. Thomas Autenrieth **Department of Obstetrics**   
Specialist in general practice **and Gynaecology**  
Kohlgruber street 2 a **Chief Physician Dr. med. Rainer Wahl**  
82442 Saulgrub   
 Secretariat: (08821) 77-1300/1301  
 Fax: (08821) 7751-1300  
 E-mail: [frauenheilkunde@klinikum-gap.de](mailto:frauenheilkunde@klinikum-gap.de)  
 Our reference: BOC- BOC  
 Date: 07.27.2013

**Salak, Kira Inez born on: 04.09.1971 from Bad Kohlgrub**

Dear colleague,

We report on the stay of the aforementioned patient, between 07.25.2013 and 07.27.2013 in our stationary treatment.

**Admission:** 41 years old, 4. Gravida 0. Para, delivery at 40 + 5 weeks of pregnancy, EDD: 07.20.2013 Serology: 0 Rh pos. HbsAg negative, group B streptococcus test wasn’t performed, syphilis test performed.  
Admission on 07.25.2013 at 01:56, cervix dilatation on admission: 1 cm  
Premature rupture of membranes on 07.23.2013 at 20:00.  
Risks: pregnant woman over the age of 35, status post 3 abortions, allergic exercise-induced asthma.

Delivery: Secondary cesarean section on 07.25.2013 at 14:51, cephalic presentation.  
Ind. for op. delivery: exceeding the delivery date, prolonged first stage of labor,  
obstruction in the first stage of labor, discontinued home birth  
Anesthesia: epidural/peridural anesthesia by an anesthesiologist.  
Compl. / Risks: premature rupture of membranes; exceeding the delivery date;

Child: Salak, Shiloh, girl, weight 2880 g, length 48 cm, HC 32 cm  
APGAR 9/9/9. Umbilical artery pH: 7,30. Base excess -1,50 mmol/l  
Check-ups: 2nd well-baby checkup: unremarkable  
 Hip ultrasound: right Ib, left Ib, follow-up in 3rd check-up  
 Hearing test: unremarkable on both sides.  
 The broad metabolic screening was performed, results are not yet  
 available. A separate report will follow in case of suspicion.  
Discharge: on 07.27.2013; weight: 2670 g

Findings: Mammae: soft, non-irritated, abdomen: suture wound somewhat reddened, fundus: N/ 0, lochia: bloody – serous.  
BP: 110/80 mmHg; Hb: 10.90 g/dl

Course: Inpatient admission of the 41 year old, IV. Gravida, nullipara, on EDD + 5 after a discontinued home birth and premature rupture of membranes of more than 36 hours and an unripe cervix despite regular contractions. Mrs Salak was strongly advised to undergo a cesarean section due to the protracted labor, but she initially opposed to the procedure with normal inflammatory values and normal CTG. After there was no cervix opening following a whole day of regular contractions, the married couple finally agreed to the secondary cesarean section.  
Intraoperatively increased bleeding, uneventful postoperative course.  
Uneventful puerperal course.

Kind regards,

Dr. med. Rainer Wahl Dr. med. Georg Hartung Christina Böhner  
 Chief physician Chief resident Resident

**Academic Teaching Hospital of the  
 Ludwig-Maximilians Univerity Munich**

Mr. **Children Hospital**  
Dr. med. T. Autenrieth **Senior physician Dr. med. R. Morhart**  
Kohlgruber street 2 a  82442 Saulgrub Secretariat: (08821) 77-1350  
 Fax: (08821) 77-1351  
 E-mail: [kinderklinik@klinikum-gap.de](mailto:kinderklinik@klinikum-gap.de)  
 Our reference: MUA- ERL  
 Date: 09.24.2013

CC: Sturm family, Wäldle138, 82433 Bad Kohlgrub

Preliminary Medical Report

Dear colleagues,

We report on **Shyloh Sturm**, born **07.25.2013;** inpatient stay from 09.21.2013 until 09.24.2013.

**Diagnoses:  
- Somnolence assessment  
- Suspected seizure**

**History:**Was on her father’s arm, she fell asleep, her father wanted to give the child to its mother, the child remained asleep as it was moved, which is unusual for it according to the parents, generally it wakes up while being moved, it wasn’t possible to wake the child up immediately. Only through a pinch of the cheek did the child snore loudly then scream, then suddenly became limp, no cyanosis, only pallor. The father reported that the breathing was otherwise unremarkable. It wasn’t possible to wake the child up for more than 4 – 5 minutes; an emergency physician was thereupon called, the child didn’t twitch, was never sick before, no fever, no sign of an infection. An uneventful transport by ambulance to our clinic.

**Findings on admission:**2 month old baby in good general condition, rectal temperature 37,2 ° C, weight 4.470 g (… percentile), length … cm (… percentile). Pale, slightly mottled skin, child was deeply asleep during the examinations, wakeable only by a pain stimulus, no petechiae, no exanthema, ENT area unremarkable, heart, lungs, abdomen unremarkable, preliminary neurological assessment unremarkable, other pediatric/internal organ examination findings unremarkable.

**Diagnostics:  
Laboratory results on admission:**Leukocytes 12,4 /nl, Hb 12,9 g/dl, thrombocytes 503 /nl, CRP 0,01 mg/dl, age-appropriate normal electrolyte values, renal retention parameters, elevated GOT at 54 U/l, elevated GPT at 44 U/l, elevated GGT at 62 U/l, LDH value normal, elevated lactate at 3,6 mmol/l, elevated ammoniac at 98

μg/dl. Venous blood gas analysis: pH 7,4, pCO2 30 mmHg, standard bicarbonate 18 mmol/l, BE -5,5 mmol/l, cerebrospinal fluid status: cell number 1 /3, protein 41 mg/dl, CSF glucose 49 mg/dl, CSF albumin 39,9 mg/dl.

Urine status: around 10 erythrocytes /μl, around 70 leukocytes /μl, otherwise unremarkable.  
Stool test for rotaviruses and noroviruses: negative.  
RSV-virus: negative.  
Cerebrospinal fluid test for enterovirus: results pending.  
Cerebrospinal fluid culture: results pending.

**ECG:**Age-appropriate normal result.

**Long-term ECG:**Results pending.

**UKG:**Unremarkable findings (final results pending)

**EEG:**Side difference, possibly caused by artefact (final results pending)

**Findings, therapy and course:**The patient was admitted with unclear somnolence for further assessment. Because of the history and the laboratory evidence of slightly elevated lactate, there is a suspicion of a convulsive event. Additionally, there were elevated ammoniac and transaminases values. The cerebrospinal fluid analysis showed no evidence of meningitis. The final EEG result was still pending at the day of discharge, as a side difference was shown, another EEG in the sociopaediatric center in Garmisch-Partenkirchen is recommended. The echocardiography and ECG showed an age-appropriate normal result. The result of the long-term ECG was still pending at the day of discharge.  
Shyloh was neurologically unremarkable in course of the hospitalization.  
We could discharge her on 09.24.2013 in good general condition to your care.

**Recommendation:**Follow-up visit in case of deterioration of the general condition, unclear somnolence.  
In case of another seizure continuing for over 2 – 3 minutes, diazepam 5 mg rectal administration.  
Arrangement of an appointment for an additional EEG in around 4 weeks in the sociopaediatric center Garmisch-Partenkirchen, Gehfeldstr. 24, 82467 Garmisch-Part., Tel.: 08821-701-171, please bring the pediatrician’s referral with you.

Kind regards



Dr. med. R. Morhart Dr. med. Michael Fedlmeier Annerose Mueller  
 - chief physician - - senior consultant - - resident -

**Your contact person**Mrs Annerose Mueller, resident  
Department 2/4 Extension: 08821 / 77-2240

**Academic Teaching Hospital of the  
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 E-mail: [kinderklinik@klinikum-gap.de](mailto:kinderklinik@klinikum-gap.de)  
 Our reference: MUA- ERL  
 Date: 09.24.2013

Dear colleagues,

We report on **Shyloh Sturm**, born **07.25.2013;** inpatient stay from 09.21.2013 until 09.24.2013.

**Diagnoses:**

**- Somnolence assessment  
- Suspected seizure  
- Small PFO**

**History:**Was on her father’s arm, she fell asleep, her father wanted to give the child to its mother, the child remained asleep as it was moved, which is unusual for it according to the parents, generally it wakes up while being moved, it wasn’t possible to wake the child up immediately. Only through a pinch of the cheek did the child snore loudly then scream, then suddenly became limp, no cyanosis, only pallor. The father reported that the breathing was otherwise unremarkable. It wasn’t possible to wake the child up for more than 4 – 5 minutes; an emergency physician was thereupon called, the child didn’t twitch, was never sick before, no fever, no sign of an infection. An uneventful transport by ambulance to our clinic.

**Findings on admission:**2 month old baby in good general condition, rectal temperature 37,2 ° C, weight 4.470 g (… percentile), length … cm (… percentile). Pale, slightly mottled skin, child was deeply asleep during the examinations, wakeable only by a pain stimulus, no petechiae, no exanthema, ENT area unremarkable, heart, lungs, abdomen unremarkable, preliminary neurological assessment unremarkable, other pediatric/internal organ examination findings unremarkable.

**Diagnostics:  
Laboratory results on admission:**Leukocytes 12,4 /nl, Hb 12,9 g/dl, thrombocytes 503 /nl, CRP 0,01 mg/dl, age-appropriate normal

electrolyte values, renal retention parameters, elevated GOT at 54 U/l, elevated GPT at 44 U/l, elevated GGT at 62 U/l, LDH value normal, elevated lactate at 3,6 mmol/l, elevated ammoniac at 98 μg/dl.  
Venous blood gas analysis: pH 7,4, pCO2 30 mmHg, standard bicarbonate 18 mmol/l, BE -5,5 mmol/l, Cerebrospinal fluid status: cell number 1 /3, protein 41 mg/dl, CSF glucose 49 mg/dl, CSF albumin 39,9 mg/dl.  
Urine status: around 10 erythrocytes /μl, around 70 leukocytes /μl, otherwise unremarkable.  
Stool test for rotaviruses and noroviruses: negative.  
RSV-virus: negative.  
Cerebrospinal fluid test for enterovirus: results pending.  
Cerebrospinal fluid culture: results pending.  
Screening for congenital metabolic diseases: no evidence for an organic acid disorder or an amino acid disorder.

**ECG:**Age-appropriate normal result.

**Long-term ECG:**Partially overlapped with artifacts, continuous sinus rhythm, average HR 138 /min, maximal HR 214 /min, miminal 109 /min. QTc time can’t be calculated within the recording period. No pauses > 2,5 s, no high grade ventricular events.

**Electrocardiography on 09.23.2013:**Indication: unclear event, cardial cause cannot be completely ruled out.  
Situs solitus, antrioventricular and ventriculoarterial concordance. The right and left ventricle function is systolically and diastolically normal. VCI is normal.  
Right venticle and atrium are of normal size, left atrium is of normal size, unremarkable neonatal and normal global LV function. AV valves appear normal. Aortic valve is tricuspid, unremarkable ascending aorta, descending to the left. The head/cervical vessel branches are normal. Age-appropriate normal global biventricular function, a small PFO in the atrial septum with no hemodynamic significance or evidence of a left-to-right shunt, ventricle septum normal, no CoA, no PDA. No pericardial effusion. No pleural effusions.

**EEG:**Side difference, possibly caused by artefact. Reexamination is needed.

**Findings, therapy and course:**The patient was admitted with unclear somnolence for further assessment. Laboratory results showed slightly elevated lactate, ammoniac and transaminase values. No evidence of meningitis in CSF diagnostics. A side difference was shown in the EEG. A reexamination is needed after consultation with Dr. Kopp in the sociopediatric center in Garmisch-Partenkirchen. The findings suggest a susp. Convulsive event.  
Shyloh was neurologically unremarkable and cardiovascularly stable in course of the hospitalization.  
We could discharge her on 09.24.2013 in good general condition to your care.

**Recommendation:**

* Follow-up visit in case of deterioration of the general condition, unclear somnolence.
* In case of another seizure continuing for over 2 – 3 minutes, diazepam 5 mg rectal administration.
* Arrangement of an appointment for an additional EEG in around 4 weeks in the sociopaediatric center Garmisch-Partenkirchen, Gehfeldstr. 24, 82467 Garmisch-Part., Tel.: 08821-701-171, please bring the pediatrician’s referral with you.

Kind regards

Dr. med. R. Morhart Dr. med. Michael Fedlmeier Annerose Mueller  
 - chief physician - - senior consultant - - resident -

**Your contact person**Mrs Annerose Mueller, resident

**Department 2/4 Extension: 08821 / 77-2240**

Andreas Steiner +0 00 00000 10.10.2013-11:06 0001

**Andreas Steiner**Pediatrician Tel.: 08191/3195Specialization in neuropaediatrics Fax.: 08191/39065  
Altöttinger Str. 3 E-mail: kinderarzt-steiner@t-online.de  
86899 Landsberg am Lech

To  
**Dr. med. Thomas Autenrieth**

Dear colleague, Dr. med. Thomas Autenrieth,

I report shortly on the patient mentioned below,  
whom I examined on **10.08.2013**.

|  |  |
| --- | --- |
| Patient |  |
| **Name:** | **Shyloh Sturm** |
| Born: | **07.25.2013** |
| Diagnosis: | **Suspected seizure disorder** |
| Question: | Brain dysfunction, epilepsy typical potentials |
| Medication: | CBC |

**History:**S. shows seesaw like waves, restlessness with muscular tension. The symptoms increase every 3 waves and lead eventually to a loss of consciousness; she can’t be woken up for a few minutes.  
When treated with a cannabinoid (CBC?), the symptoms clearly improve, under this treatment, the child shows normal impulses and smiles, actions previously abscent. The parents seemed very exhausted and their communication seems to be not uncomplicated.

**Examination findings:**BL 62 cm (97.p.), BW 4990 g (50.p.), HC 39 cm (10.p.).  
The girl is light pink, alert, smiling.  
Unremarkable internal organ examination.  
Assymetrical head position to the left and mild plagiocephaly.

**Additional examinations:**None.

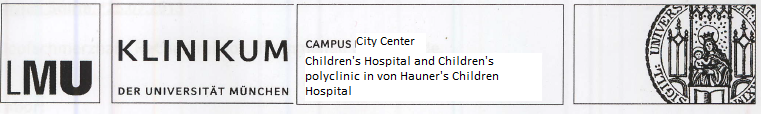
**Summary and evaluation:**The parents are very concerned and very fixed on significant pathology.

I believe the videos show no signs of a specific pathology and I believe cerebral seizures are unlikely to be a cause. The unconsciousness at the end of the event must be further clarified.

**Procedures:**Due to the parents’ fixation – the seem dissatisfied with my assessment – I believe a long-term EEG monitoring is in order. For this purpose I made a referral to Dr. Borggräfe in the Dr. van Hauner’s Children Hospital.  
Due to the muscular imbalance, I recommended an osteopathic treatment.

**Kind regards,**

**A. Steiner**This finding was sent by a computer



Medical Center of the Univerity of Munich, Dr van Hauner’s Children’s Hospital

To **Internal department - infants**  
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82442 Saulgrub Fax: +49 89 5160-2733  
  
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 [www.kinderspital.de](http://www.kinderspital.de)  
  
 Postal address:  
 Lindwurmstr. 4  
 80337 Munich

Our reference: 3175601 – 0050533753

Munich, 11.09.2013

**CC:** Sturm family, Wäldle138, 82433 Bad Kohlgrub

**Patient. Shyloh Sturm, born 07.25.2013**

Dear colleague,

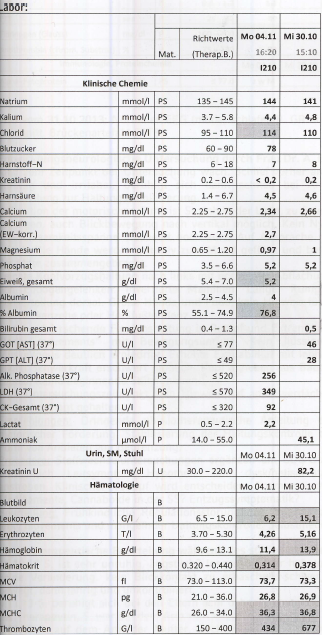
We report on the stay of the aforementioned patient, between 10.30.2013 and 11.05.2013 in our stationary treatment.

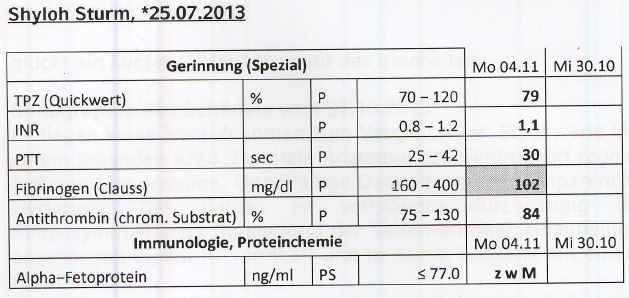
**Diagnoses:**

* **Susp. regulatory disorder of early childhood with phases of unrest and jerky movements**
* **Susp. dyskinetic movement disorder with reduced postural control**
* **Muscular hypotonia**
* **Assymetrical head position to the left with mild occipital flattening**
* **Increased excitability with lively proprioceptive reflexes on both sides**
* **Epicanthus on both sides**
* **Self medication by the parents with a hemp suspension with evidence of cannabinoids in the urine**

**History:**

**Physical examination findings:**Good general condition and feeding status, weight \*\*\* kg (\*\*\* percentile), length \*\*\* cm (\*\*\* percentile), good spacial, temporal and personal orientation. Pupils round, isocore. Direct and consensual light response on both sides, prompt and equal on both sides. Brain nerve status reveals no abnormalities. Reflexes trigerred equally on both sides, negative Babinski sign. Strength 5/5, coordination age-appropriate. Pulse \*\*\* /min, BP \*\*\* mmHg. Regular heart rhythm with a normal heart rate, normal heart sounds, both in systole and diastole. Vesicular breath sounds on both sides, both lungs are equally ventilated, no crackles.  
Abdomen supple, not painful on pressure, normal peristaltic sounds on all 4 quadrants. No hepatosplenomegaly. No renal angle tenderness, spine not tender to percussion. Throat with no signs of inflammation, eardrum not inflamed.

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**EEG on 10.31.2013:** normal EEG (tired, asleep). Background rhythm was not definable as there was no wake phase. Electrode bridge artifact F8T8.

**Neurodevelopmental examination by Dr. A. Enders on 10.31.2013:**Child is awake at the time of examination. Was sleeping on her mother’s chest. Mostly restless and irritable, then quickly calms down when offered limitation and body stabilization.  
When in a position of motoric rest, Shyloh is able to fixate and follow to both sides, vertical eye movement is also possible. No nystagmus. Epicanthus on both sides. The attention span still seems to be short. Reactive smiles when triggered and variable facial expressions. The hands were regularly moved towards the tongue and sucked, right side > left side and brought towards the center. Assymetrical head position to the left with occipital flattening. Dimples on the cubital joint. Inverted mamillae. Long torso. No obvious atypical fat distribution dorsally. Large hands and feet, no evidence of peripheral trophic disorder like a hallux vagus or a pes cavus tendency.   
Still has a mainly flexion posture of the trunk and extremities. Unstable postural control. Jerky movements with restless movement. No fluid alternating pedaling movement. Muscle tone clearly lowered. Increased excitability with lively proprioceptive reflexes on both sides. Sitting up againt gravity is difficult to perform. Lifting head from prone position is only possible with a caudal stabilization. No beginning protective postural reflexes.  
No evidence of seizure-like events at the time of the examination. Vigilance is maintained constant for a long time.  
Recommendations: urgent physiotherapeutic guidance of the parents in the areas of handling and promotion of motor ability. Stabilization of the postural control using clear feedback by offering limitation.  
Procedure: Completion of the metabolic investigation with CDG-diagnostics and AFP. Diagnostics with the purpose of assessing the leading symptom of hypotension and a dyskinetic-ataxic movement disorder.The clinical course will determine the management. Determining anamnestically and in detail the role of medications, cannabinoids during PG? Withdrawal symptoms?  
Evaluation: regulatory disorder of early childhood with phases of unrest, vigilance fluctuations, Jerky movements and poor postural control. Self medication by the parents.

**Physiotherapeutic evaluation during the during the in-patient stay:**  
10.31.13 S. is very restless, anxious? Generally very hypotonic, decreased skin turgor. She doesn’t tolerate any changes, eye contact is difficult to achieve, difficult to assuage, when S. moves, her movements are erratic and uncontrolled.  
4.11.13 S. is very easily calmed by the parents. Very little attention was paid to the therapist today; S. was on her father’s arm.  
5.11.13 S. is on her mother’s arm, eye contact to the therapist, smiles and 2 sounds are heard. S. is despite of still in constant movement (low amplitude) despite “feeling well”. With extra limitation, she succeeds in keeping calm for a short moment (10 sec).

**Ultrasonography of the skull:**  
No previous tests are available for comparisons. Unfavorable examination conditions as the child is moving constantly. Normal brain anatomy with normal size of the internal and external cerebrospinal fluid spaces. Unremarkable presentation of the brain parenchyma with age-appropriate gyration. The corpus callosum is completely consistent and properly configured. Symmetrical presentation of the lateral ventricles. Unremarkable flow-curve of the anterior cerebral artery with an RI of 0,69 and in the basilar artery with an RDI of 0,65. No evidence of ICH.  
Evaluation: Unremarkable ultrasound findings of the skull.

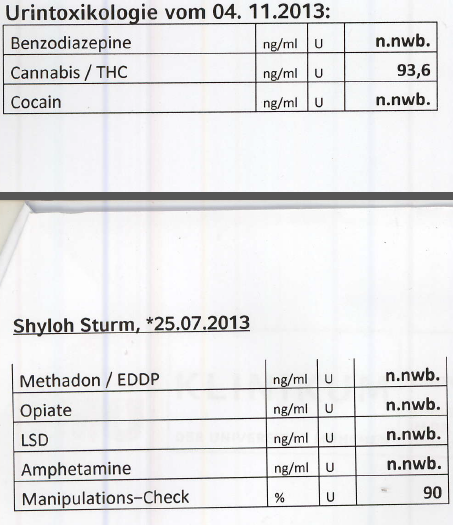
**MRI of the skull in narcosis on 11.04.2013:**  
Preliminarily validated: no previous tests for comparison available. No evidence of a recent diffusion disorder. The interhemispheric fissure is centered on the midline. The internal and external cerebrospinal fluid spaces show age-appropriate width. No evidence of a raised intracranial pressure. Beginning myelination, also age-appropriate. The corpus callosum has a normal appearance. No brain parenchyma malformations were identified. As far as could be observed in the test which is not optimized for this purpose, a normal appearance of the large intracranial vessels. No evidence of contrast-enhancing lesions / masses in the brain parenchyma.  
Evaluation: Normal brain parenchyma findings.

**Newborn screening on 10.31.2013**: unremarkable.

**Amino acids in plasma on 10.31.2013**: unremarkable.

Basic metabolic screening (University Hospital in Freiburg) on 11.04.2013:  
Organic acids in urine: massively increased succinic acid and midly increased lactate and alpha-hydroxyglutaric acid point predominantly towards a bacterial degredation of the sample, which is can therefore only be assessed to a limited extent:  
Mild ketonuria (acetoacetic acid, beta-hydroxybutyric acid) with the corresponding increased secretion of saturated, unsaturated and 3-hydroxy dicarboxylic acids (including 3-hydroxyglutaric acid). This is not infrequently seen as a result of other diseases, or physiologically with hyperglycemia. If persistent or recurrent and explained by another cause, one should consider a ketolysis defect, especially succinyl CoA oxoacyl CoA transferase (SCOT) deficiency. Please send us an additional urine sample for control. The use of a dried blood spot acylcarnitine profile is recommended (performed on 11.04.2013, see below).  
Amino acids qualitative: no evidence of an amino acid disorder.

Free carnitine / acylcarnitine in plasma on 11.04.2013:  
Generalized increase of acylcarnitines with different chain lengths. No free carnitine deficiency. No evidence of a specific congenital disease. A control examination is recommended.



**Summary:**

**Therapy/Recommendations:**

**Repeat visit:**

* The sociopediatric center in Dr. van Hauner’s Children Hospital was contacted for consultation with Dr. A. Enders. Repeat visit in around two to three months (in Feb. 2014), appointment by phone number 089-55 27 340.

The in-patient stay passed without any complications and Shyloh could be discharged in good general condition to your out-patient care.

We thank you for the collaboration treating this patient and don’t hesitate to contact us if you have any questions.

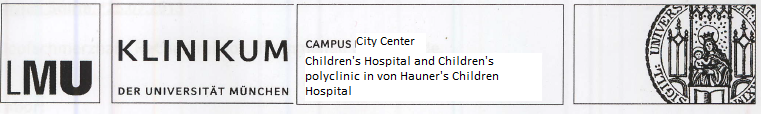
Kind regards

Dr. C. Thilmany S. Javeri  
Senior consultant Resident

**Receive regular information about Dr. van Hauner’s Children Hospital.**

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See more information at  
**freundeskreis.hauner@med.uni-muenchen.de**



Medical Center of the Univerity of Munich, Dr van Hauner’s Children’s Hospital

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 Postal address:  
 Lindwurmstr. 4  
 80337 Munich

Our reference: 3175601 – 0050533753

Munich, 11.09.2013

**CC:** Sturm family, Wäldle138, 82433 Bad Kohlgrub  
Dr. A. Enders, neurodevelopment, sociopediatric center  
PD Dr. I. Borggräfe, neuropediatrics  
Mrs Seubert, in house social services  
Garmisch-Partenkirchen Medical Center, Dr. Müller, department 2/4, Auenstr. 6, 82467  
Garmisch-Partenkirchen

Patient: Shyloh Sturm, born 07.25.2013

Dear colleagues,

We report on the stay of the aforementioned patient, between 10.30.2013 and 11.05.2013 in our stationary treatment.

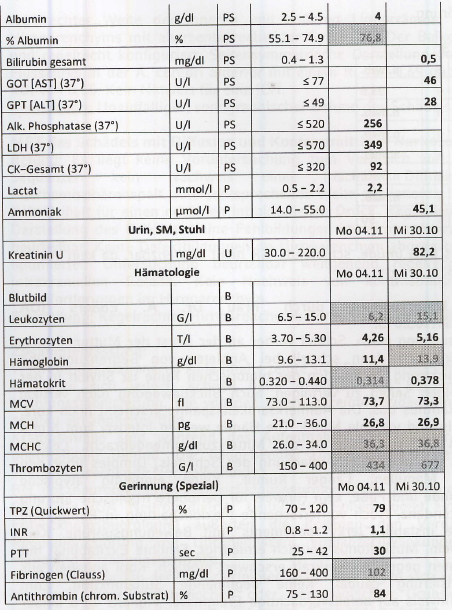
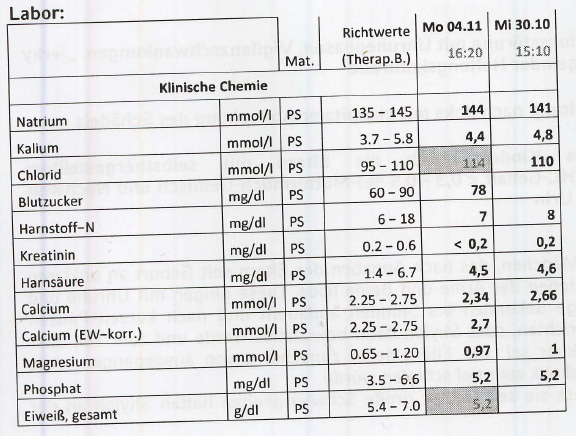
**Diagnoses:**

* **Regulatory disorder of early childhood with phases of unrest, vigilance fluctuations, jerky movements, and reduced postural contorl**
* **Muscular hypotonia**
* **Assymetrical head position to the left with occipital flattening**
* **Epicanthus on both sides**
* **Self medication by the parents with a self-produced industrial hemp (THC content < 0,3 – 0,5 %) and mother’s milk mixture, with evidence of cannabinoids in the urine**

**History:**  
Shyloh is a 3 months old girl who suffered, according to the parents, from unclear convulsive states since birth, with contractions of arms and legs. These are accompanied with restlessness and crying, could last between several seconds to hours and reappear after short breaks. The parents report that Shyloh then becomes unconscious und partially unwakeable for several hours. The parents initially assumed Shyloh to be deeply asleep in the context of a kind of infantile colic.  
The parents further report that since birth, they’ve had many difficulties breast and bottle feeding Shyloh, since she has always suffered from the muscle contractions (“spasms”). Additionally, they could observe a stereotypic movement pattern (repetitive head turning to the left, extension of the legs, raising the arms). A normal sleep pattern is not possible due to these frequent episodes. According to the parents, she sleeps for 15 minutes at most and quickly wakes up again.  
On the basis of these symptoms, the parents assumed "extensor infantile spasms”, which they have been treating with self-produced non-standardized hemp suspension for the last two months (THC content of the industrial hemp < 0,3 – 0,5 %).  
Four weeks before the current in-patient admission (end of September 2014) the parents noticed that Shyloh didn’t respond to stimuli during these episodes. With increasing somnolence, Shyloh was transported by ambulance to the Garmisch hospital. There arose, most notably, a suspicion of a convulsive event; a meningitis was excluded.  
For further diagnostic procedures, a visit to the sociopediatric center was recommended.

Birth history: BW 2880 g, length 48 cm, head circumference 32 cm. Full-term newborn, birth through secondary cesarian section. No drug therapy during the pregnancy.  
Family history: 1st child of the mother after 3 miscarriages. Mother (42 years old) is healthy, father (52 years old), American golf war veteran suffers from a chronic pain condition since the war and therefore started self medicating with a hemp flower extract. Two adult paternal half siblings, both healthy.

**Physical examination findings on admission:**Good general condition and feeding status, weight 4,8 kg (25th – 50th percentile), size 62 cm (around 50th percentile). Pupils round, isocore. Direct and consensual light response on both sides, prompt and equal on both sides. Brain nerve status reveals no abnormalities. Reflexes trigerred equally on both sides, negative Babinski sign. Strength 5/5, coordination age-appropriate. Pulse 116 /min. Regular heart rhythm with a normal heart rate, normal heart sounds, both in systole and diastole. Vesicular breath sounds on both sides, both lungs are equally ventilated, no crackles.  
Abdomen supple, not painful on pressure, normal peristaltic sounds on all 4 quadrants. No hepatosplenomegaly. No renal angle tenderness, spine not tender to percussion. Throat with no signs of inflammation, eardrum not inflamed. Skin: light pink, warm in the extremities, normal capillary refill time.

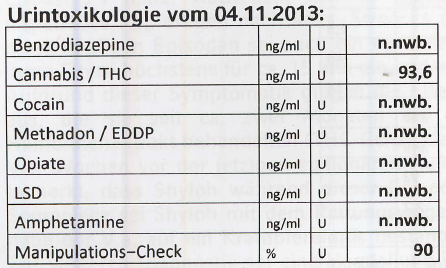


**Newborn screening on 10.31.2013**: unremarkable.

**Amino acids in plasma on 10.31.2013**: unremarkable.

**Basic metabolic screening (University Hospital in Freiburg) on 11.04.2013:**Organic acids in urine: massively increased succinic acid and midly increased lactate and alpha-hydroxyglutaric acid point predominantly towards a bacterial degredation of the sample, which is can therefore only be assessed to a limited extent:  
Mild ketonuria (acetoacetic acid, beta-hydroxybutyric acid) with the corresponding increased secretion of saturated, unsaturated and 3-hydroxy dicarboxylic acids (including 3-hydroxyglutaric acid). This is not infrequently seen as a result of other diseases, or physiologically with hyperglycemia. If persistent or recurrent and explained by another cause, one should consider a ketolysis defect, especially succinyl CoA oxoacyl CoA transferase (SCOT) deficiency.  
Amino acids qualitative: no evidence of an amino acid disorder.

Free carnitine / acylcarnitine in plasma:  
Generalized increase of acylcarnitines with different chain lengths. No free carnitine deficiency. No evidence of a specific congenital disease.



**EEG on 10.31.2013:** normal EEG (tired, asleep). Background rhythm was not definable as there was no wake phase. Electrode bridge artifact F8T8.

**Neurodevelopmental examination by Dr. A. Enders on 10.31.2013:**Child is awake at the time of examination. Was sleeping on her mother’s chest. Mostly restless and irritable, then quickly calms down when offered limitation and body stabilization.  
When in a position of motoric rest, Shyloh is able to fixate and follow to both sides, vertical eye movement is also possible. No nystagmus. Epicanthus on both sides. The attention span still seems to be short. Reactive smiles when triggered and variable facial expressions. The hands were regularly moved towards the tongue and sucked, right side > left side and brought towards the center. Assymetrical head position to the left with occipital flattening. Dimples on the cubital joint. Inverted mamillae. Long torso. No obvious atypical fat distribution dorsally. Large hands and feet, no evidence of peripheral trophic disorder like a hallux vagus or a pes cavus tendency.   
Still has a mainly flexion posture of the trunk and extremities. Unstable postural control. Jerky movements with restless movement. No fluid alternating pedaling movement. Muscle tone clearly lowered. Increased excitability with lively proprioceptive reflexes on both sides. Sitting up againt gravity is difficult to perform. Lifting head from prone position is only possible with a caudal stabilization. No beginning protective postural reflexes.  
No evidence of seizure-like events at the time of the examination. Vigilance is maintained constant for a long time.  
Evaluation: regulatory disorder of early childhood with phases of unrest, vigilance fluctuations, Jerky movements and poor postural control. Self medication by the parents.

**Physiotherapeutic evaluation:  
from 10.31.13** S. is very restless, anxious? Generally very hypotonic, decreased skin turgor. She doesn’t tolerate any changes, eye contact is difficult to achieve, difficult to assuage, when S. moves, her movements are erratic and uncontrolled.  
**from 11.04.13** S. is very easily calmed by the parents. Very little attention was paid to the therapist

today; S. was on her father’s arm.  
**from 11.05.13** S. is on her mother’s arm, eye contact to the therapist, smiles and 2 sounds are heard. S. is despite of still in constant movement (low amplitude) despite “feeling well”. With extra limitation, she succeeds in keeping calm for a short moment (10 sec).

**Ultrasonography (transfontanellar and transcranial) of the skull, including color-coded Doppler sonography on 10.31.2013:**Findings: No previous tests are available for comparisons. Unfavorable examination conditions as the child is moving constantly. Normal brain anatomy with normal size of the internal and external cerebrospinal fluid spaces. Unremarkable presentation of the brain parenchyma with age-appropriate gyration. The corpus callosum is completely consistent and properly configured. Symmetrical presentation of the lateral ventricles. Unremarkable flow-curve of the anterior cerebral artery with an RI of 0,69 and in the basilar artery with an RDI of 0,65. No evidence of ICH.  
Evaluation: Unremarkable ultrasound findings of the skull.

**MRI of the skull with diffusion and contrast medium in narcosis on 04.11.2013:**Preliminarily validated: no previous tests for comparison available. No evidence of a recent diffusion disorder in the diffusion-weighted sequences. The interhemispheric fissure is centered on the midline. The internal and external cerebrospinal fluid spaces show age-appropriate width. No evidence of a raised intracranial pressure. Beginning myelination, also age-appropriate. The corpus callosum has a normal appearance. No brain parenchyma malformations were identified. As far as could be observed in the test which is not optimized for this purpose, a normal appearance of the large intracranial vessels. No evidence of contrast-enhancing lesions / masses in the brain parenchyma.  
Evaluation: Normal brain parenchyma findings, as far as assessable.

**Summary:**During the in-patient stay, Shyloh was overall restless and irritable, quickly calming down when offered limitation and body stabilization. The video recordings of episodes at home shown by the parents show a similar picture.  
Seizures did not occur during the stay. The EEG was normal. The imaging examinations also showed age-appropriate findings.  
The neuropediatric/neurodevelopmental examination by PD Dr. I. Borggräfe (senior consultant neuropediatrics, director of epileptology) and Dr. A. Enders (senior consultant, neurodevelopment) showed suspicion of regulatory disorder of early childhood with phases of unrest, vigilance fluctuations, Jerky movements and poor postural control.  
In a synopsis of the diagnostic measures thus far, there is no clear evidence for the presence of a metabolic or neurologic underlying disease. Unspecific changes are shown, which require an additional examination. Moreover, the diagnostics should be expanded.  
Dr. Enders told the parents in a detailed conversation that we don’t currently have evidence of a specific neurometabolic disease. The focus is on a physiotherapeutic approach to therapy.  
Also during the in-patient stay, the parents independently administered the self-produced industrial hemp extract multiple times a day. The toxicological analysis of the urine showed THC (93 ng/ml). Following a consultation with the colleagues in laboratory and forensic medicine, this value in an infant is difficult to classify. The value is considered low for an adult cannabis user. In an infant, it may be concluded that the substance is being administered regularly. It was explained to the parents that self medication with a non-standardized hemp flower extract has unclear effects on the health and future development of the child. A termination of this treatment and an alternative we offered were refused by the parents.  
The treatment by the parents, especially the mother, was calm, friendly and cool-headed. No signs of mental overload were seen. The father showed signs of strain at times, in addition to a rather demanding attitude towards us.This, in addition to the self medication with the hemp flower extract, could be the result of latent dispair and helplessness of the parents. The in-patient stay was overall experienced as very burdening by the parents, so that Shyloh was given a vacation from time to time. For the same reason, the in-patient stay was terminated before receiving all results at the urgent requst of the parents. Accordingly, the recommendations arising from the results should be deployed on an outpatient basis.  
On 11.07.2013, the interdisciplinary panel with our colleague from social services, Mrs Seubert, in addition to colleagues from pediatric neurology, neurodevelopment, neonatology and the attending physiotherapist, discussed the further proceedings. By mutual agreement, no immediate danger for the child was determined. However, a long-term impact cannot be ruled out, so that a close follow-up by the local pediatrician is seen as appropriate.  
PD Dr. Borggräfe will contact Dr. Autenrieth for this purpose. In case signs of an immediate danger for the child appear, intermediate-term continuation of the hemp flower extract treatment, or conspicuous parent’s compliance, contacting the regional youth office in Garmisch-Partenkirchen should be critically discussed. Such a discussion is yet to be carried out.  
We urgently recommend the termination of the self medication using hemp extracts and a close contact with a physiotherapist. For this purpose, our colleagues in physiotherapy will telephonically provide the parents with contact with a physiotherapy praxis close to home. Furthermore, we’re offering the parents a treatment in our sociopediatric center by Dr. Enders for further monitoring.

**Recommendations:**

* Urgent termination of the self medication using hemp extracts.
* Contacting a sociopediatric center, gladly the center in the Dr. van Hauner’s Children Hospital by Dr. A. Enders. First inspection in around three to four months (in Feb / March 2014). Appointment by phone number 089-5527340.
* Physiotherapeutic guidance of the parents in the areas of handling and promotion of motor ability. Contacting a physiotherapy praxis close to home will be telephonically provided to the parents by our physiotherapists. Stabilization of the postural control using clear feedback by offering limitation.
* Close clinical follow-up by the pediatrician. If necessary, contacting Dr. Enders/PD Dr. Borggräfe again.
* Additional diagnostics with the purpose of assessing the leading symptom of hypotension and a dyskinetic-ataxic movement disorder, in consultation with the colleagues from neurodevelopment and neuropediatrics.
* CDG-diagnostics
* Determining the levels of alpha-fetoprotein.
* Controlling the free carnitine / acylcarnitine in plasma
* Controlling the organic acids in urine

We thank you for the collaboration treating this patient and don’t hesitate to contact us if you have any questions.

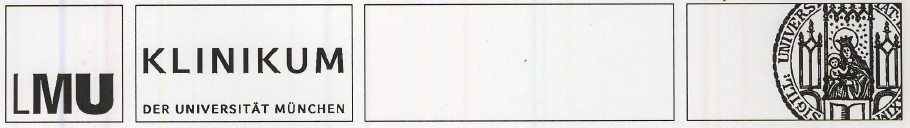
Kind regards

Dr. C. Thilmany S. Javeri  
**Senior consultant Resident**

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See more information at  
**freundeskreis.hauner@med.uni-muenchen.de**



**Radiology Findings**

**Shyloh Sturm**, born 07.25.2013  
Admission date: 10.30.2013; Discharge date: 11.05.2013

Missing Anf.Pfl.OE: KIISAUG **Syngo-ID:** 3193560

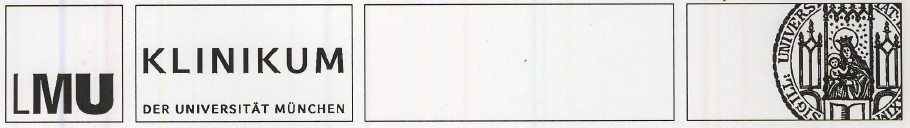
**Tests:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cat. | ServiceID | Service description | Perf-date | Perf-time |
|  | S—US-- | Transcranial skull ultrasonography | 10.31.2013 | 15:44:00 |
|  | S—USTC | Transcranial skull ultrasonography | 10.31.2013 | 15:44:00 |
|  | SIGUD-- | CCDS of the intracranial vessels | 10.31.2013 | 15:44:00 |

**Reporting physician:** Eberhardt, Dr. med. K. M.  
**2nd reporting physician:** Grimmelt, Dr. med. Ann-Cristin, physician  
**Supervisor:** Ley-Zaporozhan, PD Dr. med. Julia, senior consultant

**Evaluation:**Unremarkable ultrasound findings of the skull.

**Findings:**No previous tests are available for comparisons. Unfavorable examination conditions as the child is moving constantly.  
Normal brain anatomy with normal size of the internal and external cerebrospinal fluid spaces. Unremarkable presentation of the brain parenchyma with age-appropriate gyration. The corpus callosum is completely consistent and properly configured. Symmetrical presentation of the lateral ventricles. Unremarkable flow-curve of the anterior cerebral artery with an RI of 0,69 and in the basilar artery with an RDI of 0,65. No evidence of ICH.

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**Radiology Findings**

**Shyloh Sturm**, born 07.25.2013  
Admission date: 10.30.2013; Discharge date: 11.05.2013

Missing Anf.Pfl.OE: KIISAUG **Syngo-ID:** 3195348

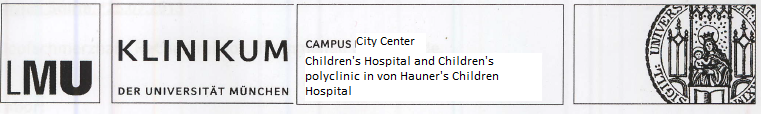
**Tests:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cat. | ServiceID | Service description | Perf-date | Perf-time |
|  | STLMR-- | MRI of the temporal lobe | 10.31.2013 | 15:44:00 |
|  | S--MRDF | MRI of the skull with diffusio. | 10.31.2013 | 15:44:00 |

**Reporting physician:** Maxien, Dr. med. Daniel  
**Supervisor:** Coppenrath, senior consultant Dr. med. Eva

**Evaluation:**Unremarkable presentation of the brain parenchyma, as far as assessable.

**Findings:**No previous tests for comparison available.  
No evidence of a recent diffusion disorder in the diffusion-weighted sequences. The interhemispheric fissure is centered on the midline. The internal and external cerebrospinal fluid spaces show age-appropriate width. No evidence of a raised intracranial pressure. Beginning myelination, also age-appropriate. The corpus callosum has a normal appearance. No brain parenchyma malformations were identified. As far as could be observed in the test which is not optimized for this purpose, a normal appearance of the large intracranial vessels. No evidence of contrast-enhancing lesions / masses in the brain parenchyma.



**PM – Rehabilitation team pediatrics** Contact person:  
 Birgit Warken (sub. Barbara Kellersch)

Internet  
 reha.klinikum.uni-muenchen.de

Postal address:  
 Ziemssenstraße 1  
 80336, Munich

**PM I Rehabilitation team Intern. Pediatrics**

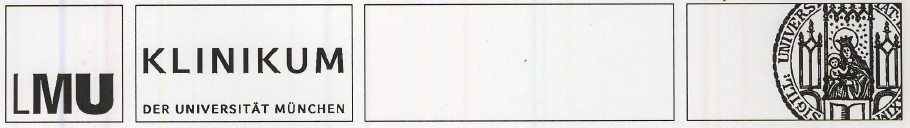
**Shyloh Sturm**, born 07.25.2013  
Service on 10.31.2013, at 12:26:00.

Dear ladies and gentlemen,

**Clinical information**History:  
Unclear movement disorder, metabolic disorder?  
Question:  
Please consult.  
Diagnoses:  
Unclear movement disorder, metabolic disorder?

**Remarks**10.31.13 S. is very restless, anxious? Generally very hypotonic, decreased skin turgor. She doesn’t tolerate any changes, eye contact is difficult to achieve, difficult to assuage, when S. moves, her movements are erratic and uncontrolled.  
11.04.13 S. is very easily calmed by the parents. Very little attention was paid to me today; S. was on her father’s arm.  
11.05.13 S. is on her mother’s arm, eye contact to the therapist, smiles and 2 sounds are heard. S. is despite of still in constant movement (low amplitude) despite “feeling well”. With extra limitation, she succeeds in keeping calm for a short moment (10 sec).

Ulrike Röslmair  
Therapist



**KI I Neurology outpatient unit**

**Shyloh Sturm**, born 07.25.2013  
Service on 10.31.2013, at 17:28:00.

Dear ladies and gentlemen,

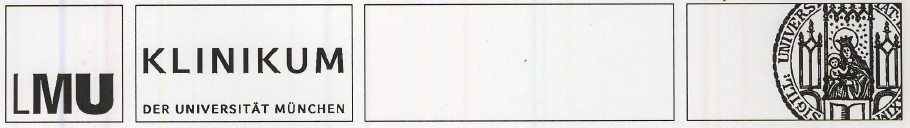
**Clinical information**History:  
Susp. unclear restlessness of movement, DD movement disorder  
Question:  
Please perform a sleep-EEG.  
Diagnoses:  
Susp. unclear restlessness of movement, DD movement disorder

**Findings:**Normal EEG (tired, asleep).  
Background rhythm was not definable as there was no wake phase.  
Electrode bridge artifact F8T8.

**Evaluation:**Normal finding in tiredness and sleep EEG.

Dr.med. Timo Roser  
Hospital resident

PD Dr. med. Ingo Borggräfe  
Hospital senior consultant



**KI I Neurology outpatient unit**

**Shyloh Sturm**, born 07.25.2013  
Service on 11.05.2013, at 20:30:00.

Dear ladies and gentlemen,

**Clinical information**History:  
Susp. movement disorder, stereotypies  
Question:  
Please consult by Dr. Enders  
Diagnoses:  
Susp. movement disorder, stereotypies

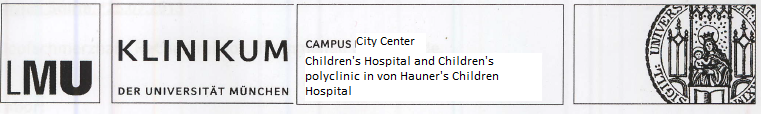
**Findings**Child is awake at the time of examination. Was sleeping on her mother’s chest. Mostly restless and irritable, then quickly calms down when offered limitation and body stabilization.  
When in a position of motoric rest, Shyloh is able to fixate and follow to both sides, vertical eye movement is also possible. No nystagmus. Epicanthus on both sides. The attention span still seems to be short. Reactive smiles when triggered and variable facial expressions. The hands were regularly moved towards the tongue and sucked, right side > left side and brought towards the center. Assymetrical head position to the left with occipital flattening. Dimples on the cubital joint. Inverted mamillae. Long torso. No obvious atypical fat distribution dorsally. Large hands and feet, no evidence of peripheral trophic disorder like a hallux vagus or a pes cavus tendency.   
Still has a mainly flexion posture of the trunk and extremities. Unstable postural control. Jerky movements with restless movement. No fluid alternating pedaling movement. Muscle tone clearly lowered. Increased excitability with lively proprioceptive reflexes on both sides. Sitting up againt gravity is difficult to perform. Lifting head from prone position is only possible with a caudal stabilization. No beginning protective postural reflexes.  
No evidence of seizure-like events at the time of the examination. Vigilance is maintained constant for a long time.

**Recommendation**Urgent physiotherapeutic guidance of the parents in the areas of handling and promotion of motor ability. Stabilization of the postural control using clear feedback by offering limitation.

Completion of the metabolic investigation with CDG-diagnostics and AFP. Diagnostics with the purpose of assessing the leading symptom of hypotension and a dyskinetic-ataxic movement disorder.The clinical course will determine the management. Determining anamnestically and in detail the role of medications, cannabinoids during PG? Withdrawal symptoms?

**Evaluation:**  
Regulatory disorder of early childhood with phases of unrest, vigilance fluctuations? Jerky movements and poor postural control.  
Self medication by the parents.

Dr. med. Angelika Enders  
Hospital resident



Medical Center of the Univerity of Munich, Dr van Hauner’s Children’s Hospital  
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Internal department – infants **Laboratories for metabolic analysis**  
In House **Biochemical and molecular genetics**

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 Postal address:  
 Lindwurmstr. 4  
 80337 Munich

Munich, 10.31.2013

**Shyloh Sturm, born 07.25.2013** Your reference  
 Order date 10.30.2013  
 Sample material Plasma  
 Laboratory number **A-15 834**

**Clinical information and question:** unclear myoclonus, movement disorder

**Analysis report: amino acid analysis**

(Quantitative determination of the physiological (free) plasma amino acids with ion exchange chromatography / ninhydrin detection)

**Findings (plasma):**The submitted sample shows age-appropriate normal concentrations of the free amino acids. No evidence of significant quantities of rare (pathological) amino acids.  
See appendix for quantitative findings.

**Summarized evaluation:**Age-appropriate normal findings. No evidence of a primary amino acid metabolic disorder.

Kind regards

**Prof. Dr. B. Koletzko Dr. A. Lotz-Havla Prof. Dr. A. Muntau**

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 Dr. med. F. Grotenhermen  
 - physician -  
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 [www.dr-grotenhermen.de](http://www.dr-grotenhermen.de)

Dr. med. F. Grotenhermen – Am Mildenweg 6 – D-59602 Rüthen

LMU Hospital of the Munich University  
Downtown campus  
Sociopediatric center  
in Dr. van Hauner’s Children Hospital  
Lindwurmstraße 4  
80337 Munich

February 25. 2014

**Medical Report**

Sturm, Shyloh, born 07.25.2013  
Residence: Wäldle 138, 82433 Bad Kohlgrub

Dear colleague,

I report on Shyloh Sturm, who has been in my treatment since February 22. 2014.  
Her father has long been in my treatment. I have also spoken with him several times by telephone regarding his daughter’s medical condition. The following comments are based on telephone conversations in the past months, the history and examination on February 22. 2014 as well as on medical records of the young patient.

**Course of pregnancy:**It was an IVF pregnancy, in which 3 embryos were transferred to the uterus.  
Two embryos have been lost, the first in the 7th and the second in the 11th week of pregnancy. The mother was 41 years old at the time. In the second trimester, Mrs Sturm started noticing increasing pressure from the abdomen against the diaphragm and strong continuous movement of the child in the evening hours. She occasionally had respiratory problems due to the increased pressure against the diaphragm. She visited a delivery nurse in the 7th month of pregnancy, who noticed that the uterus was very hard. At that time, the weight of the fetus went down from the 50th percentile to the 20th percentile. The vigurous movements were felt up to the end of the pregnancy and occurred between 20:00 and 23:00, lasting an average roughly one hour. Mrs Sturm couldn’t fall asleep during the child’s movements.

**Delivery:**The delivery was in the 40th week of pregnancy. The labour continued for 18 hours, with no progress. The parents report that the physicians had no explanation for this. Subsequently, an emergency caesarean section was performed. The birth weight was 2880 g. No health abnormalities were found.

**Early childhood development:**There were problems with breastfeeding from the start. These are documented in several videos. One can see that Shyloh tries to drink, but doesn’t succeed due to her sudden head movements to the front and back. When she was awake, she moved her legs in a cycling motion.  
Her arm muscles were so rigid that she couldn’t move her arms towards the center of her body and suck on her thumb. This happened particularly, as is shown in the videos, with her left arm. She also couldn’t touch her legs or feet with her hands.  
There were other abnormalities. She generally awoke a few minutes after falling asleep and made jumpy, vigorous, fast, sweeping movements with her arms. She never slept for more than a few minutes before being awoken again by a new seizure. Lastly, she cried during these seizures. But she didn’t cry for other reasons, such as hunger.  
Since she was a week old, there was an alternating shift, within a few minutes, of crying, stiffening of the legs or the whole body followed by relaxation, stiffening then relaxation again, whereas the spasms increased in intensity each time. These seizures are then suspended for a few minutes before starting again. Finally she lost her consciousness for a short period of time. This condition was initially interpreted as sleep by the parents, especially as it was described at the time as normal by the treating physicians, care attendants and delivery nurse.

**First in-patient stay (end of second month)**At two months of age, Shyloh stayed as an in-patient in the Garnisch-Partenkirchen Children Hospital (09.21. until 09.24.2013), due to a suspected seizure. Her body had stiffened slowly – as described above - for around 20 minutes, she was then unconscious for several minutes (around 4 minutes). This was the strongest seizure to date. The parents then called the emergency physician. Shyloh could be awoken following these 4 minutes with hitting the feet for a few seconds. The respiration was irregular. She was conscious as she arrived to the hospital. However, she underwent a second seizure, which wasn’t noticed by the physicians. The doctors in the emergency room saw Shyloh in the half-conscious state after the seizure. She could be awoken only through a pinch of the cheek (see medical report from 09.24.2013). She was under narcosis for an intervention, after which she slept for half a day without the appearance of seizures. An EEG was performed on the 3rd day of hospitalization, at a time when she had no seizures. It was unremarkable. The parents received diazepam suppositories in case of a new seizure. Smaller seizures occurred again, before she left the hospital.

After being discharged, the father told me about the events for the first time, over the phone. The father was very worried, as his daughter’s medical condition has increasingly worsened in the past 2 months, while the treating doctors didn’t find the situation to be serious. Due to known anti-epileptic properties of cannabidiol, especially in Dravet syndrome, the parents decided to start a therapeutic attempt with this non-psychotropic cannabinoid with few side effects, which could be obtained from hemp grown for fibre/industrial hemp. They administired hemp tea to Shyloh. In moderate dosage, this lead to partial control of the seizures.  
On her 3rd day after being discharged, the girl spasmed each time she tried to drink. So much so that it wasn’t possible to breastfeed her or give her something to drink out of a bottle. The parents were now desperate. They received a prescription for Dronabinol (THC) from the general practicioner. At that day she had another severe seizure in which she lost consciousness for around 5 minutes. They gave her the Diazepam suppository. The parents then waited for a while and administered fibre hemp tee together with milk and a few drops of Dronabinol. The seizures decreased in intensity and weren’t accompanied by [unconsciousness](http://www.dict.cc/englisch-deutsch/unconsciousness.html) anymore.  
In the following period, the parents tried finding an optimal dosage of CBD oil together with Dronabinol. This is composed of 8 drops of CBD oil and 2 drops Dronabinol, administered several times a day. In the course of 4-5 weeks, Shyloh recovered completely. She didn’t have seizures anymore.  
In order to exclude organic causes, such as a brain tumour, the parents now started to strive for additional diagnostics. The first pediatrician in the children’s hospital in Garmisch-Partenkirchen decided that Shyloh is normal and recommended that Mrs Sturm takes instructions for correct breastfeeding. The second pediatrician, a neurologist, who specializes in epilepsy, also explained that he couldn’t detect any abormalities, he however noticed a cervical dystonia and recommended a chiropractor.

**Second in-patient stay (aged 3 months)**The parents brought Shyloh to the LMU pediatric hospital in Munich, in order to perform an MRI and monitor the child (in-patient stay from October 30th until November 5th). Initially, she kept receiving the tee mixture with CBD and THC from the nurses. Two days after she was hospitalized, the use of the drug was stopped, to observe the symptoms. In total, 5 physicians saw the spasticity, the muscle hypertonia and Shyloh’s inability to breastfeed. She once again received the treatment including CBD and THC. A few days later, the treatment was stopped once again for 12 hours, in order to perform an MRI. Movement abnormalities appeared again, which were noted by Dr. Enders. An emergency MRI was ordered. The physicians ordered the further use of the CBD-THC mixture. They explained that they couldn’t assign a diagnosis to the existing symptoms and didn’t know what the child has. She was subsequently discharged.

**Medical report from LMU on November 9th 2013**The parents struggled to receive the discharge report, which was denied to them.  
A report marked as “Draft” (“Entwurf”) was only handed to the father when he arrived at the hospital personally.  
Under the section “Procedures”, the following suggestion is seen: “Determine anamnestically and in detail the role of medications, cannabinoids during PG? Withdrawal symptoms?”.

**The further symptomatic course**The parents needed around 3 days to stabilize Shyloh following her discharge. She had a significant seizure one day after she was discharged.  
In the age of 4 months, Shyloh started moving her left hand for the first time. At this time, she started making normal sounds and was making sounds constantly, also crying when she was hungry or needed anything else. She also gained weight. She was completely relaxed for the first time in her life, started smiling and laughing. She seems to be completely normal at the moment. She doesn’t show any signs of cognitive or physical retardation. She takes the medicine every 2 hours during the day and every 3 hours at night.

**Examination findings on February 22nd 2014**No abnormalities in the orientational examination. Shyloh remained awake for the first third of the 1,5 hour long consultation, looking around interestedly, smiling, and moving her arms and legs adequately. She then slept in her mother’s arms.

**Planned further procedures**A conversation with the sociopediatric center of the LMU hospital is planned for 03.07.2014, in which Dr. Enders, Dr. Landgraf and Mrs Giese should participate. Dr. Landgraf is a pediatrician and a psychologist specializing in drug exposition during the pregnancy, physical abuse, et cetera.

**About the use of cannabinoids/Cannabis in epilepsy**I have a good experience in using cannabis, CBD and THC (Dronabinol) to treat different kinds of epilepsy in several of my patients. Several patients who are otherwise resistant to treatments received, with my support, a special permit to use cannabis flowers from the federal narcotics control board. My patients include a severely disabled girl from Hamburg, who had 2-3 tonic-clonic seizures a day despite taking 2 antiepileptic drugs. On the 3rd day after starting the Dronabinol treatment, she was seizure-free for the whole day for the first time in a long while. The parents were very happy. A second girl from North Rhile-Westphalia, whose father is also a physician, had 3-4 severe seizures a month despite a ketogenic diet and a relatively high dose of valproic acid. We initially started a CBD therapy. It’s still too early to say anything about the effectiveness at this stage.

**An expert opinion**The parents are concerned they might lose custody of their child and face criminal charges based on the administration of cannabis. It is clear to them that the hospital seeks the child’s best interest. However, there are presently potential discrepancies between the opinions of the parents and the hospital regarding the best way to protect the child.

In addition, the symptoms described by the parents, which are mentioned in the medial repots and seen in the videos cannot be triggered by cannabis use in pregnancy or by withdrawal symptoms following cannabis use. Further to this, I wish to refer to a review of the relevant literature, for example the relevant chapters by Professor Peter Fried (Canada) and Professor Wayne Hall (Australia) in one of the books I published (German edition: Cannabis und Cannabinoide: Pharmakologie, Toxikologie und therapeutisches Potential. Huber Publishing).

Please find enclosed excerpts from my overview of the therapeutic potential of Cannabidiol for a pharmaceutical company. An overview of Dronabinol (THC), which I wrote by order of the World Trade Organization, can be found on the WHO webpage: <http://www.who.int/medicines/areas/quality_safety/4.2DronabinolCritReview.pdf?ua=1>

I recommended to the Sturm family to meet the agreed upon appointment with you. If any legal problems arise, I recommended they turn to a known patient rights lawyer. If the family feels that they are not well served from a diagnostic and therapeutic perspective, I offered an in-patient stay in a children’s hospital in Rhineland through a pediatrician friend.

Kind regards

Dr. F. Grotenhermen