

## **PREFACE**

The history is the most important part of the neurologic evaluation. Patients should be put at ease and allowed to tell their story in their own words. Usually, a clinician can quickly determine whether a reliable history is forthcoming or whether a family member should be interviewed instead. Specific questions clarify the quality, intensity, distribution, duration, and frequency of each symptom. What aggravates and attenuates the symptom and whether past treatment was effective or not should be determined. Specific disabilities should be described quantitatively and their effect on the patient's daily routine noted. Past medical history and a complete review of systems are essential because neurologic complications are common in other disorders, especially diabetes, cancer, arterial hypertension, myocardial infarction, tuberculosis. Family history is important because many metabolic, muscle, nerve, and neurodegenerative disorders are inherited. Social, occupational, and travel history provides information about unusual infections and exposure to toxins and parasites.

Sometimes neurologic symptoms and signs are functional or hysterical, reflecting a psychiatric disorder. Typically, such symptoms and signs do not conform to the rules of anatomy and physiology, and the patient is often depressed or unusually frightened. However, functional and physical disorders sometimes coexist and distinguishing them can be challenging.

A case history is the main medical document, which should be filled for every patient in a hospital. This document has both juridical and financial matter. Case history is the document about a patient, but it also reflects a doctor as a person, his professional level and erudition.

## **CASE HISTORY DESIGN**

### **1. Questioning a patient**

#### **1.1 Personal data**

- a) Patient's full name*
- b) Sex (male, female)*
- c) Age, date of birth*
- d) Permanent address*

*e) Occupation*

*f) Marital status (single, married, widowed)*

*e) Admission date, discharge date*

## **1.2 Patient's complaints**

You should describe the complaints of all system at the day of curing, but first of all, it's necessary to give special attention to the complaints about nervous system. You need define the following symptoms and signs.

### **a) Ache**

Has your patient got a headache? What's the character of the headache (acute, pressing, sharp, cramp-like)? How severe is it (mild, moderate, severe)? How often does the pain occur? How long does it last? Does it spread anywhere (tongue, neck, occiput)? What usually provokes a headache (emotions, wrong diet, movements, change in the weather? What eliminates the attack of headache (e.g. medicines, massage, sleeping, coffee, strong tea)? Is it accompanied with nausea, vomiting, loss of vision)? Has your patient got back pain?

### **b) Sense organs**

Vision: bad eyesight, good eyesight, blindness. Has your patient got visual disorders? When did he notice impairment of vision? Can he see in both eyes? Has he got double vision? Can he appreciate colours? Has he ever had transient blindness or blurring of vision?

Hearing: normal, diminished, deafness, tinnitus.

Taste: usual, reduced, pervert

Smell: usual, aggravate, diminished, absent.

### **c) Syncope and vertigo**

How often your patient swoon? Does he feel sense of fear, nausea, vomiting, tinnitus, heartbeat before fainting? Does he feel giddy or, tinnitus, sense of rotate surrounding object around you?

### **d) Seizures**

How often your patient does have convulsions? Has he got aura? What's it character (sense of fear, pain in the stomach, headache, vertigo, auditory or visual hallucinations, sense of unusual taste or smell)? Can he remember what happened during the attack? What

about incontinence during the attack? What kind of motor manifestation he has got during the epileptic fit? What's he feel after fit sleepness, confusion, weakness, headache, vomiting?

**e) *Speech***

Has he noticed changing in his voice? Is it nasal (hoarse, scrambled, scanning)? Has he any difficult in swallowing food?

**f) *Motor function***

When did he feel weakness in his limbs? Was it increase gradually or arise suddenly? Has he ever felt constraint, clumsiness, disorders of coordination, involuntary movements)? Does he feel weak or heavy in arms or legs? Does your hands or head tremle?

**g) *Sensory disorders***

Does he have a sensation of numbness, a prickling or a tingling sensation, a burning sensation)? Does he feel cold or heat on both side? Has he ever got burn, but didn't feel it? Does he feel surrounding objects with his hands?

**h) *Sphincter disorders***

Can your patient control urination? Has he got nocturnal urinary incontinence (painful urination, involuntary urination, retention of urine, urinary difficulty)?

**3. Review of organ's systems**

In this chapter you have to compactly formulate complaints of other systems.

**a) *General complaints***

Cenesthesia (good, satisfactory, bad). Does he feel general weakness?

Weight loss, malnutrition. Rise of body temperature (indicate the time and limits of its fluctuation during a day, relieving factors); character of fever and its duration. Sweating: its intensity and time of occurrence (night sweating). General indisposition, weakness, fatigue, decreasing of work capacity.

**b) *Cardiovascular system***

Does the patient feel pain in the heart region? If yes, you should define its characteristic, e.g. persistent, periodical, acute, dull, constricting, stabbing, burning, pressing, factors that relieve or remove pain, irradiation zone. Intermission or palpitation. Does he

have breathless? When does it occur, when does it over? Has he ever had swelling. Has he got episodes of increase decrease of blood pressure? What medicines he and in what dosage does he take to prevent the?

**c) Respiratory system**

Does he suffer from cough? Character of cough (periodical or paroxysmal, dry or with sputum). When does it occur? In the morning, at night, all day long? Has he got blood spitting? Pulmonary dyspnea: yes, no, paroxysmal, constant. Has he got pain in torax?

**d) Digestive system**

What is patient appetite (good, moderate, increased, lack of appetite)? Has he got hiccup, eructation, vomiting, nausea? If present, detail the relation to food, other provoking factors. Does he have pain in abdomen? Character of pain (lancinating, aching, gripping, spasmodic, dull, knife-like). Does he suffer from stool disorders, metheorism?

**e) Urinary system**

Does he has pain in lumbar region? What's the kind of pain (one-sided, double-sided, lancinating, gripping, spasmodic, acute, dull etc.)? Provoking factors: physical exertion, emotional stress, eating. Relief factors. Irradiation zone. Urination: normal or painful, frequency of urination, colour of urine.

**f) Musculo-skeletal apparatus**

You should define the presence of pain in bones, muscles, joints. If yes, define the following: location, intensity, timing, relieving factors. Has the patient any deformation or changes of the configuration of joints or bones, joint or vertebral stiffness?

**4. History of present illness.**

You have to define the following facts:

What are the causes of the disease on the patient's own opinion? What were the first symptoms of the diseases when did they occur? What factors preceded the diseases or brought on current exacerbation (overcooling, infection, stress the other factors)? Did the patient receive any treatment before the admission to the hospital (self-treatment, ambulatory or hospital)? In the case of chronic

disease you should detailed the following: the first attack of the disease, course (frequency, duration of exacerbation, results of their treatment).

Life anamnesis

**a) *Family anamnesis***

You should detail the disease of immediate family.

**b) *Gynecological anamnesis***

When did the first menstruation? Number of deliveries, abortion, operations on the reproductive system, characteristic of climacteric period.

**c) *Professional anamnesis***

When did you find your first job? Chronology of professional life from the beginning. Characteristics of work place: dry or wet, heating, size, cleanness, gases, fumes, ambient temperature, vibration, air moisture, working position. Working regimen: duration of the working day, breaks, daily or night work.

**d) *Housing conditions***

Where does he live? Flat, hostel, private house. Characteristic of living quarters: wet or dry, cold or warm, dark or light, dirty or clean. Does it have water supply system, sewerage system.

**e) *Harmful habits***

Alcohol, tobacco, tea, coffee, drugs abuse

**e) *Prior diseases, traumas, operations***

All the diseases, operations, injuries during the whole life period in chronological order. Special attention should be paid to brain and spinal injuries, infectious diseases, such as AIDS, venereal diseases, viral hepatitis, malaria, tuberculosis.

**f) *Allergic anamnesis***

Allergic reaction to different kind of food, medicines, trees' blooming, industrial or domestic allergens.

### **Physical examination**

You must state briefly condition of systems of organs.

**a) *General condition***

Level of consciousness (alert, confused, soporous state, stupor, coma).

Position (active, passive, forced).

Weight, height, temperature. Nutritional status (satisfactory, obesity, poorly nourished, cachexia). Body type (normosthenic, asthenic, hypersthenic, proportional or disproportional).

Expression (normal, full of suffering, sad, excited, indifferent).

Colour of cutaneous covering (normal, pale, cyanosis or acrocyanosis, gray).

Trophic changes, sweat secretion disturbances, lymph nodes. All groups of lymph nodes should be examined by palpation. If lymph nodes are felt by palpation, you should indicate its painfulness, consistency, their adhesions with each other and with surrounding tissues.

Bones and joints. Symmetry of bones, size, shape and symmetry of limbs, pathologic curvature of the spine column if any (lordosis, kyphosis, scoliosis), deformity of bones, deformation of the chest, pelvis, limbs. Configuration, deformation, contractures, ankylosis of joints. The capacity of active and passive movements (full volume, limited, impossible). Pain during motion. Skin temperature above joints.

### ***b) Respiratory system***

Examination, palpation, percussion, auscultation of chest.

Respiration rate. It's quantity of respiratory movements per minute. Respiration rhythm (regular, abnormal). Breath sounds (vesicular breathing, diminished breath sounds, rough breath sounds). Rales (no, dry rales, moist rales), crepitation. You need specify location of rales, crepitation and abnormal breath sounds).

### ***c) Cardiovascular system***

Pericardial palpation, percussion, auscultation. Cardiac hypertrophy, heart sounds (clear or muted). Cardiac murmurs. Pulse (symmetry, frequency, rhythm, tension). Blood pressure. Arterial pulsation normal, absent, decrease. You should examine aa. carotis communis, aa. temporalis, aa. radialis, aa. femoralis, aa. poplitea, aa. dorsalis pedis.

### ***d) Gastrointestinal system***

Mouth, lips (colour, herpes labialis, dryness, cyanotic). Colour of mouth mucosa. Tongue (shape, size, colour, teeth prints). Tonsils (shape, size).

Inspection of abdomen (configuration, herniae and subcutaneous masses, pain, resistance of abdominal wall, defense musculaire, divergence of rectus abdominal muscles). Does abdominal wall take part in respiration? Respiratory movements (active, regular, irregular, absent). Boalded, retracted, abnormal peristaltic.

Pancreas palpation: pain in zones of projection.

Liver (visible enlargement, its pulsation). Palpation of the liver: margin (acute, round, soft, solid), painfulness. In the case of liver enlargement – is it smooth, lobular). Determination of liver limits.

Palpation of gallbladder. Define the shape, size, mobility, consistence of the gallbladder, painfulness.

#### ***e) Urinary system***

Inspection of lumbar region Skin hyperemia, smoothed contours. Palpation of kidney (yes or no). If a kidney is revealed by palpation – define its shape, surface, consistency, painfulness, mobility).

Palpation and percussion of the bladder (size, shape, surface, consistency, painfulness, the level of the upper margin of the bladder).

#### ***f) Endocrine system.***

Inspection and palpation of thyroid gland: location, degree of enlargement. Ocular signs. Women should be asked about disorders of menstrual function or absence of menses, infertility.

### **Neurological examination**

#### **1. General symptoms**

##### ***a) Consciousness level assessment (Glasgow coma scale)***

Eye opening:	Verbal response:	Motor response:
_ spontaneous – 4	_ orientated – 5	_ obeys commands – 6
_ to speech – 3	_ confused – 4	_ localising pain – 5
_ to pain – 2	_ words – 3	_ flexing to pain – 4
_ none – 1	_ sounds – 2	_ spastic flexion – 3
	_ none – 1	_ extending to pain – 2
		_ none – 1

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Total score:

**b) Headache, dizziness, nausea, vomiting.** If present, you should provide detail explanation (look at page ).

**c) Change of pulse** (no, bradycardia, tachycardia, arrhythmia, and other).

**d) Respiratory impairment.**

## 2. Meningeal syndrome

Absent or present.

Hyperesthesia, neck stiffness, Kernig's sign, Brudzinski sign (upper, middle, lower), meningeal position.

## 3. Cranial nerves

**a) Olfactory nerve.** Does your patient have got anosmia, hyposmia, dysosmia, olfactory hallucinations? You should propose your patient close his left (right) nostril, appreciate smell intensity. Does he feel unusual smells?

**b) Nervus opticus**

Vision (good eyesight, weak eyesight, blindness, sense of mist in front of eyes), visual hallucinations.

Visual fields.

**c) Nn. oculomotorius, trochlearis, abducens)**

Does your patient have got double vision? Define width and uniformity of palpebral fissures. Form, width, and uniformity of pupils. Does your patient have got mydriasis, miosis or anisocoria? Range of motions of eyeballs, pupil responses (ocular convergence, accommodation of the eye)

**d) N. Trigeminus**

Sensory function. Ache, paresthesias in innervation's zones of trigeminal nerve, painfulness in supra-, infraorbitalis and mandibular points, trigger zones. Do you see any skin rash.

Motor function. Hypotrophy, tone and tetanilla of masticatory muscles, range of motions of lower jaw, trismus.

Reflex function. Corneal, conjunctival, supraorbital, mandibular reflexes.

**e) Facial nerve**



Symmetry of palpebral fissure, frontal, nasal and nasolabial folds. Atrophy, tetanilla, hyperkinesis of expression muscles. Flatness of frontal, and nasolabial folds. Lagophthalmos.

Xerophthalmus, lacrimation, hypo- or hypersalivation. Taste abnormalities. Hearing abnormalities (hyperacusis).

**f) Vestibulocochlear nerve**

Hearing abnormalities: hypo- or hyperacusis, ear noise, deafness, auditory hallucinations. hearing acuity in left (right) ear.

Vestibular apparatus. Dizziness (systemic or nonsystemic). Nystagmus (horizontal, vertical, rotator).

**g) Glossopharyngeal nerve, vagus nerve**

Motor function. Voice change (hoarseness, nasal voice, hypophonia, aphonia).

Deglutition (aphagia, dysfagia, painful swallowing).

Speech (scrambled, dysarthria, anarthria, lispings).

Reflex function (palatal reflex, pharyngeal reflex)

Secretory function (salivation, dry mouth)

Sensory function (ageusia, hypogeusia, parageusia). Taste in the back one thirds of tongue.

**h) Accessory nerve**

Trapezius muscle, sternocleidomastoid muscle (hypotrophy, atrophy, hypertrophy, fasciculation). Strength and range of motions.

**i) Hypoglossal nerve**

Range of motion of tongue. Condition of tongue muscles (hypertrophy, atrophy, fasciculation).

**4. Motor system**

**a) external inspection of motor system**

Does your patient have got hypotrophies, atrophies, pseudohypotrophies, tetanilla, fasciculation? Hyperkinesis, define its types: chorea, tremor, myoclonia, tics, athetosis, hemiballism)

**b) range of active and passive motion**

It's may be absolute, limited or absent.

**c) muscle strength**

You should appreciate it on the five-number scale in all segments of limbs.

**d) muscle tone**

Atony, hypotony, spastic hypertony (Wernicke-Mann's position), catch tone, contractures of limbs.

*e) Reflex function*

**REFLEXES**

<b>Tendon reflexes</b>	<b>D (right side)</b>	<b>S (left side)</b>
Biceps		
Triceps		
Brachioradial		
Knee		
Achilles		
<b>Superficial reflexes</b>		
Upper abdomen		
Middle abdomen		
Lower abdomen		
Corticospinal tract responses		

Deep reflexes (tendinous and periosteous): diminished, exaggerated, symmetrical on either side, increased reflexogenic zone). Cutaneous reflexes: diminished, exaggerated, symmetrical.

Defense reflexes. Ankle clonus. Patellar clonus. Synkinesis. Frontal release signs. Corticospinal tract responses from upper limbs (Bechterew's, Joukowski's, Rosslimo's), lower limbs (Babinski's, Oppenheim's, Gordon's, Shaefer's Bechterew's, Joukowski's Rossolimo's).

*f) Types of paresis and paralysis.*

Central (spastic) or peripheral (flaccid) paralysis. Monoplegia (monoparesis), paraplegia (paraparesis), tetraplegia (tetraparesis), hemiplegia (hemiparesis).

**5. Bowel and bladder function**

Urinary and fecal retention, urinary difficulty, fecal and urinary incontinence, sexual dysfunction.

## 6. Coordination of movements and gait

Does your patient carry out these tests?

Coordination of movements, posture and gait	D (right side)	S (left side)
Finger-to nose test		
Heel-to-knee test		
Adiadochokinesis		
Stewart-Holmes test		

Romberg's test.

Cerebellar hypotonia, cerebellar (scanning) speech, megalographia, intention tremor.

Gait (ataxic, hemiplegic, paralytic, equine (stepagge), tottering, waddling (goose), stamping, cerebellar, parkinsonian.

## 6. Sensation

Describe types of sensation on symmetrical segments of the patient's body. Superficial types of sensation (pain sensation, temperature, tactile). Deep sensibility (vibration, proprioceptive, pressure and weight sense). Combined type of sensation (tactile gnosis, sense of localization, sense of discrimination).

Stretch symptoms (Lasegue's sign, Wassermann's sign, Mazkewitch's sign). Tenderness of exit points of occipital nerves, intercostal nerves, paravertebral points.

Other sensory disorders.

## 7. Higher cerebral function and mental change

Speech: disarthria, anarthria, disphonia, scanning speech, mutism, bradylalia.

Aphasia: total, sensory, motor, amnesic.

Reading: alexia, paralexia.

Writing skills: agraphia, paraphagia).

Praxis: apraxia (constructive, motor, ideational).

Gnosis: agnosia (tactil, visual, auditory, gustatory, olfactory, autotopagnosia, anosognosia, metamorphopsia, pseudomelia).

Cognitive skills: memory, attention, thinking.

Mentality: conform to age and education

Emotional state: irritability, apathy, depression, compulsive thoughts, euphoria.

Sleep: deep, normal, interrupted.

### **PRELIMINARY DIAGNOSIS**

It is based on complaints, anamnesis morbid, vitae, objective data (data of anamnesis, objective data on neurological system, internal organs).

Formulate principal diagnosis, complications and associated diagnosis.

Names of all diseases without abbreviation, point their stage, gravity, type according to classification given in appliances.

### **PLAN OF FURTHER INVESTIGATION**

Aim – to confirm principal diagnosis. First laboratory investigations, then – instrumental, name your prospective data. For a good management of a patient of a patient the plan of his further examination should be elaborated including the set of laboratory and instrumental methods of examination as well as consultations of suitable specialists necessary to detail and confirm the diagnosis. Only those examinations which are necessary for the certain case should be prescribed.

### **DATA OF SUPPLEMENTARY INVESTIGATION AND SUBSPECIALTY CONSULTATIONS**

Complete blood count.

Biochemistry.

Urine analysis.

Cerebral spinal fluid analysis.

Electrocardiography

Craniography, roentgenography of spine

Neurovisualisation (CT, MRI)

Other investigation techniques (electroencephalography, electromyography, ultrasound investigation, rheography, ).

You should give short comments and conclusion decision after each point place.

Subspecialty consultations: therapist, ophthalmologist, cardiologist, neurosurgeon, orthopedist and other.

## **TOPICAL DIAGNOSIS**

What's topical diagnosis? The neurologic examination is one of the most unique exercises in all of clinical medicine. Whereas the history is the most important element in defining the clinical problem, neurologic examination is performed to localize a lesion in the central nervous system or peripheral nervous system (topical diagnosis). You should substantiated topical diagnosis by results of neurological examination.

## **CLINICAL DIAGNOSIS**

The final diagnosis should be substantiated by analysis and synthesis of all aspects of patient's examination and their changes in dynamics of patient's treatment. In your case history all data of patient's injury, physical, laboratory and instrumental investigations which prove the appearance of the certain disease in the examined patient should be presented. Clinical diagnosis is included:

***Principal diagnosis*** with its form, stage, activity etc., complications, competitive diagnosis, associated diseases.

Principal disease – a disease with its form, stage, activity or via its complications determine severity of a patient condition and govern to health, life and work forecast.

***Complication of principal diseases*** – pathological process, pathogenetically connected with the principal disease, but causes clinical syndrome, anatomic and functional disorders different from primary symptoms of the principal disease.

***Assosiated disease*** – disease, diagnosed together with the principal one.

## **THE PRICIPLES OF PATIENT'S THERAPY OF PATIENT AND PROFILAXIS**

The necessary measures of care and treatment prescribe for the patient is given in the following form:

- 1) Patient's schedule of activity.
- 2) Diet №
- 3) Medicaments treatment
  - a) ethiological

- b) pathogenetic
- c) symptomatic
- 4) Physiotherapeutic treatment
- 5) Sanatory-resort treatment
- 6) Primary and secondary prophylaxis

## **PROGNOSIS**

Prognosis should be outlined for:

- 1) patient's life (favorable, unfavorable);
- 2) recovering, future course of the disease, patient's working ability, possibility for restoration of deranged function of organs and system, general prognosis (good, favorable, unfavorable, bad).

## **REFERENCES:**