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Psychiatric Aspects and the Role Of Consultation Liaison Psychiatry (CLP) in Traumatic Amputation Due to Electrical Burns for Adolescents

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Abstract---Amputation trauma due to burns is a conflict wound that is very emotionally disturbing, as is often shown on social media and on the small screen to illustrate war, but there are also unintentional events that occur in adolescents that cause burns due to electric shock. The purpose of this paper is to explain the psychiatric aspects and the role of Consultation-Liaison Psychiatry (CLP) in Traumatic Amputation Due to Electrical Burns in Adolescents so that it becomes a consideration in the selection of psychotherapy and therapy for patients. In this case report, an IPWS patient, male, 13 years old, was treated in the Burn Unit, 2nd floor, bed 2. The patient was consulted by a Plastic Surgery colleague at Sanglah Hospital Denpasar. Autoanamnesis data was obtained at the first examination, and the patient followed up during treatment with complaints of feeling sad due to the condition of the wound. The patient complains of sadness and guilt for not obeying his parents' advice not to fly kites in the field, sadness comes and goes, sometimes cries when he remembers and now he feels sad and sorry, he also wants to get well soon and be able to do activities. The patient received several therapies from Plastic Surgery Peers, Anesthesiologists, Medical Rehabilitation Peers, and Pediatric Peers. For Psychopharmacotherapy in Psychiatry, patients receive Amitriptyline tablets of 25 milligrams every 24 hours intraoral (night).

Keywords---*case report, consultation-liaison psychiatry (CLP), electrical burns, psychiatric aspects, trauma*

Introduction

CLP was first developed in 1902 at Albany Hospital, a public hospital in New York. It took decades of development before it was finally reported that there were about 900 CLP programs in the early 1990s. In 1929, a psychiatrist named Henry published guidelines for psychiatrists working with doctors in other departments. Close observation is better than guesswork, non-jargon in communication, and flexible use of theory and treatment options. These guidelines are still in effect today (Zimbrea, 2019). The practice of CLP has shifted from psychodynamic practice to biological and behavioral interventions as the biopsychosocial model of patient care has been accepted and management systems of care have adopted time-limited interventions. Subsequently, CLP developed into specialties such as hemodialysis, obstetrics, and gynecology, or general polyclinics (Zimbrea, 2019). CLP psychiatrists act as counselors and psychiatrists. In other words, it has two "masters" to consult, the doctor and the patient (Leigh, 2015). Requests for consultation from other colleagues in the form of evaluation and treatment of the patient's condition that later developed after surgery, either as a direct physiological result of surgery, as a disease that caused surgery, or as a psychological reaction to the surgical process. CLP psychiatrists support the treatment of psychiatric patients

before surgery, assess the patient's ability to obtain consent, and can also refer patients to mental health services when hospitalization is complete (Zimbrea, 2019).

Psychiatric consultations in public hospitals were initiated at the request of the general practitioner. The psychiatrist then identifies questions to answer, reviews the patient's medical record, conducts interviews with the patient and family, collects follow-up data from outpatient providers, and prepares a report for the general practitioner. Depending on the hospital context, psychiatrists may be directly involved in implementing treatment recommendations or may accompany a team of GPs (e.g., making requests for psychotropic drugs, supporting investigations, or simply recommending) (Zimbrea, 2019). The classic counseling model consists of attending visits to the hospital's main team, counseling, and assisting patients with questions about psychiatric management or behavioral problems. Psychiatric interventions in this model are 'as needed' or 'reactive'. The active counseling model being developed includes inpatient mental health examinations, and psychiatric consultations carried out in collaboration with general practitioners and the surgical team. The proactive counseling model can also look for specific psychiatric problems such as depression after CABG (Zimbrea, 2019). A systematic review of studies evaluating the impact of psychiatric consultations found that the program had positive effects such as shorter treatment days, higher patient satisfaction, and lower treatment costs (Zimbrea & Proops, 2019).

Concept

Trauma is the result of a process that physically, mentally, or psychologically affects someone who experiences an event. Then amputation is a way that is intended to save a person's life from death by causing permanent disability in the patient. Trauma can cause permanent damage to blood vessels and cause ischemia in surrounding tissues, prompting consideration of amputation in trauma cases (Olbrisch et al., 2002). Burns (combustion) is tissue loss caused by exposure to heat sources such as water, fire, chemicals, electricity, and radiation. Burns not only cause skin damage but also affect all body systems (Rohmawati, 2009). Burns is a type of tissue damage and/or loss caused by exposure to very hot sources (fire, hot water, chemicals, electricity, radiation, etc.) or very cold temperatures. Contact with a heat source (or another source) triggers a chemical reaction that de-energizes the tissue, causing cell shrinkage and damage (Moenadjat, 2009). Burns is one of the most common occurrences in the community, especially at home as first and second-degree burns are the most common. Burns are traumatic injuries that cause disability and morbidity. The degree of disability is relatively high compared to injuries from other causes. Therefore, the cost of treating burns is very high (Sjamsuhidajat & De Jong, 2005).

Electrical burns are caused by the heat generated by the transmission of electrical energy through the body. The severity of the injury is influenced by the length of contact, high voltage (voltage), and the way radio waves reach the body (Moenadjat, 2005). Amputation comes from the word amputate which means more or less beheaded. Amputation can be interpreted as an act of amputating part of the body or the whole body, surgery to remove part of the body. This procedure is recommended when organ problems that occur in the extremities cannot be corrected by other techniques, when organ conditions can threaten the safety of the client's body as a whole, or when other organs have been damaged, such as complications of infection. It affects several body systems, including the skin, nervous, musculoskeletal, and cardiovascular systems (Craeto et al., 2001; Gagnier et al., 2014). In addition, it can cause psychological problems for patients and families in the form of low self-esteem and decreased productivity. Traumatic amputations are unplanned amputations that occur as a result of trauma. Traumatic amputations can occur in any part of the body, but usually mean the loss of part or all of a limb (Kristianto & Setiawati, 2021).

Epidemiology

According to the Ministry of Health of the Republic of Indonesia (2008), the prevalence of burns in Indonesia is 2.2, with the highest prevalence in Nanggroe Aceh Darussalam (NAD) and Riau Islands (3.8%). Meanwhile in Yogyakarta, according to data from the Sleman District Health Office (2010), 277 people died after the eruption of Merapi, 107 of whom suffered severe burns (Reksoprodjo, 2010). According to Sanglah Hospital, in 2011 there were 217 cases of burns (Artawan, 2012). The incidence of burns is 73% second degree (deep), up to 17% first degree (superficial), and 10% third degree (full thickness) (Sabarahi et al., 2010). Although traumatic amputation occurs in only one in all trauma patients, it is associated with significant morbidity and mortality. H. Almost 51%. The finger was most frequently amputated in 69%, and the proximal upper arm in 9%. Blunt trauma is the most common cause of traumatic amputation in adults. Nearly half are caused by mechanisms such as traffic accidents, factory engine accidents, and train accidents. 60-80% of amputations are of the fingers, with the lower extremity being the second most common site of amputation. Lower extremity amputations are usually performed at the

diaphysis rather than at the joint, the most common site being the upper third of the tibia. Multiple amputations were a risk factor for death, with a mortality rate of 23.2%. Many amputation traumas occur in the workplace, usually in paper mills and wood product factories, often experienced by carpenters. Most cuts occur using machines such as B. Due to power tools or pinching of limbs in or between objects (Clasper & Ramasamy, 2013).

Case Report

In this case report, a 13-year-old boy was consulted in the Psychiatry Section by a Plastic Surgery colleague due to Traumatic Amputation Due to Electrical Burns. Autoanamnesis data were obtained during the first examination and the patient's follow-up during hospitalization in the Burn Unit room. Heteroanamnesis was obtained from the family waiting for the patient, the Plastic Surgery resident's colleague, and the nurse at Sanglah Hospital. The patient was interviewed on April 8, 2022, in a lying position, had an IV in his right hand and an oxygen nasal cannula appeared to be wearing clothes obtained from the hospital and covered with a blanket. The patient was thin, wrapped in bandages on his head, ears, neck, chest, stomach, arms, and legs. It is said that the patient often complains of itching in his wound, looks sad on his face, his fingernails/toes look quite well-groomed, and there is no unpleasant odor from the patient's body. During the interview, the patient looked into the examiner's eyes and answered questions asked by the examiner using Indonesian, but the patient answered simply, looked down, and looked sad (Horn et al., 2020; Sockalingam et al., 2016).

The examiner begins the interview by introducing himself and asking the patient's name. The patient can correctly state his name, current age, where he is, and the time of the examination. The patient can repeat the examiner's name correctly, the menu for breakfast this morning, and where he went to school. The patient said that he still felt sad when he remembered the incident he had experienced, but he said he did not remember the incident in detail, only remembered when he was playing a kite when the kite string hit a high-voltage electric cable and after that, he fainted and forgot what happened next. Feelings of sadness he said happened intermittently when he saw his fingers, but he began to learn to accept and continue his activities as a student. The patient said that he did not want to repeat his previous behavior and said he felt guilty for not following the advice of his parents, but he was eager to recover, there was no feeling of wanting to end his life, there was no feeling of fear or feeling inferior because his hand was going to be operated on. There was no headache, no seizures, no nausea, vomiting, chest pain, or palpitations (Thomas, 1996; Noble et al., 2006).

The patient said that he slept quite well, he had no nightmares while he was in the hospital, he just felt pain in his fingers and sometimes he cried because of the wound. He wants to get well soon and go home to be with his family and friends. The patient has never experienced anything that is considered unnatural, such as hearing a voice whose source is not clear or seeing a shadow that is not visible. The patient also did not experience a decrease in appetite and drinking. There is no fever after the first operation (25/3/2022). You can defecate once, urinate spontaneously, can sit mobilize, and the patient will be planned for a second operation on April 11, 2022. Because his Hb is low (7.8 mg/dl) he has received a blood transfusion of 3 kolf. Previous medical history was said to have never experienced chronic pain and had no psychiatric disorders, either from the patient or in his family. There was no history of drinking coffee, alcohol, smoking, or using other prohibited substances (Linde, 1982; Marcangelo & Ovsiew, 2007).

The patient said that before his illness, he was an obedient child, had a cheerful nature and liked to help his parents, had many friends, and enjoyed playing kites in the field with his friends. Whenever there is a problem he just keeps it to himself because he thinks about his parents and his four siblings. The patient is the eldest of five children and diligently takes care of his younger siblings when his parents are out. The patient is said to be sad since the incident that happened to him, he often cries because he feels sorry for not hearing his parents' advice not to fly kites in the field. Sad complaints are said to disappear when the patient remembers what happened to him and he apologizes several times to his parents. The patient is said to have first been found unconscious in a prone position on an empty field while flying a kite. It said the patient was accidentally hit by a high-voltage power line. The patient was then electrocuted and the patient was unconscious. At the time of the incident, the patient was wearing sandals made of rubber, and his right and left hands were separated from the cable. The location of the incident is Sesetan Field, Denpasar. It happened on March 16, 2022, at 16.00 (Viano et al., 1989; Lenz et al., 2007).

It said there was no previous systemic disease, no history of previous surgery, and no history of previous allergies. There was no prior psychiatric treatment. The patient is said to have had the first surgery on March 25, 2022, and the second surgery on April 11, 2022. Based on data (23 March 2022) from a Plastic Surgery Resident Fellow, it was said that the patient came to his senses brought by his family complaining of burning pain in his face, neck, chest, stomach, right hand, left hand, left right leg, genitalia after being electrocuted by high voltage electricity. approximately 30 minutes SMSS. He was said to have been unconscious and did not remember what happened to the patient, there was no headache, seizures, nausea/vomiting, chest pain, palpitations, and no shortness of breath. The

patient did not have a history of psychiatric disorders, or a history of using psychoactive substances, and also did not have a history of chronic disease (Orben et al., 2020; Rapee et al., 2019; Stahl, 2020). From the previous personality history, the patient is said to be a diligent person who helps his parents, has many friends, and is quite active in his playing environment. If there is a problem the patient chooses to be alone and diverts by playing. The patient is the expected child, there is no history of trauma when the mother was pregnant with the patient and she was born normal with a birth weight of 3100 grams. The patient was cared for by his biological father and mother and there were no problems in his growth and development (Fabi et al., 2022; Tadvi et al., 2022).

The patient is currently still attending 7th grade of Junior High School, and from the patient's psychosexual history, he has not had a partner or girlfriend so far and still prefers to spend more time playing with his friends. The patient is known in his neighborhood as a friendly and sociable person. Has many friends at school and home and has never acted against the law or been involved in legal problems (American Psychiatric Association, 2013). The patient currently lives at home with his father, mother, and four siblings. Before the daily illness, the patient was able to carry out daily activities without assistance. But at this time the patient just lay down, the patient is still in the process of accepting the events that he is experiencing at this time, the patient also said that he would follow the therapy given by the examiner. The patient said he was trying to accept what had happened to him at this time, trying to train further and continue activities as before, the patient also wanted to get well soon and get out of the treatment room. I want to be reunited with my parents and other siblings (Kesinger et al., 2014; Lamon et al., 1983; Landry et al., 2018).

In the general description of physical appearance, male patients look age-appropriate, facial features look sad, not fat or thin, and lack verbal contact and sufficient visual contact. Examination of psychiatric status found normal appearance, adequate visual contact, clear consciousness, and harmonious mood/affect of depression. Thought process: Logical Realist, coherent, sad preoccupation. There is no disturbance of perception, judgment, and insight in good condition. There was no history of insomnia, hypobulia, and raptus. Sufficient impulse control and calm psychomotor. Mechanism of self-defense repression (Hillmann et al., 2000; Johnson & Wang, 2001; Kaplan et al., 1986). From the Generalist Status, no abnormalities were found. PK laboratory results (11/4/2021: low Hb 7.8mg/dl). The patient's diagnosis according to the Indonesian Mental Disorders Classification and Diagnosis Guidelines III (PPDGJ-III) on Axis I was Organic Depressive Disorder (F06.32). In Axis II, the patient is obedient, cheerful, and diligent, MPE is repressed (Lehalle, 2020; Leigh & Zee, 2015; Mellor & Cooper, 1989). On Axis III, general medical conditions were found, both those related to the diagnosis of Axis I namely Post Debridement Combustion Diagnosis + Tangential excision + cap with Split Thickness Skin Graft (STSG) ec Raw Surface Area (RSA) 7.5%, Facial-Colli Region, Anterior Trunk, Superior Extremity D et S, Inferior Extremity D et S H5 (11/4/2022), Post Debridement Reconstruction of Auricula D And Digiti II Manus D ec Post Burn Ear Deformity with Cartilage Exposed Auricula D and Vulnus Apertum digiti II Manus D at the level of the Proximal Interphalangeal (DIP) Joint H5 (11/4/2022). Combustion Debridement History + Tangential Excision + Close with Split Thickness Skin Graft (STSG) Left Superior Extremity Region (25/3/2022) ec RSA 15.5% Facial-Colli Region, Trunk Anterior, Superior Extremity D et S, Inferior Extremity D et S , Genitalia Externa ec Combustio Gr IIB-III 18.5% (Gr IIB 6%, III 12.5%) ec HVEI. History of Amputation Disarticulation at PIP Joint Digiti II, at DIP Joint Digiti III, IV, V Manus S (25/3/2022) ec Necrotic Distal Phalanx Digiti II, III, IV, V Manus Sinistra ec High Voltage Electric Injury (HVEI). Axis IV has a problem with the disease, and on Axis V it is rated 50-41 where it is stated that the patient has serious symptoms and severe disability. GAF in the last year is 100-91 no symptoms, functioning optimally, and no insurmountable problems. Patients were given supportive psychotherapy and pharmacological therapy with Amitriptyline tablets of 25 milligrams every 24 hours intraorally (night) (Durrbach et al., 2010; Fox et al., 2012; Gannon-Loew & Holland-Hall, 2020).

Discussion

IPWS patient, Male, 13 years old, unmarried, last education in Junior High School, Student, Hindu, Bali Indonesia, treated in Burn Iso Room, 2nd Floor, 2nd bed, Sanglah Hospital, was consulted from a Plastic Surgery colleague because he was sad. The patient when interviewed on April 8, 2022, was in a lying position in the treatment room bed, had an IV in his right hand and an oxygen nasal cannula appeared to be wearing clothes obtained from the hospital and covered with a blanket. The patient was thin, wrapped in bandages on his head, ears, neck, chest, stomach, arms, and legs. It is said the patient often complains of itching in the wound and looks sad face (Battiston et al., 2002; Chauhan et al., 2013; Nisa, 2021). The patient complains of sadness and guilt for not obeying his parents' advice not to fly kites in the field, sadness comes and goes, sometimes cries when he remembers and now he feels sad and sorry, he also wants to get well soon and be able to do activities. In this case, the patient is an inpatient in the

Burn Unit II Floor bed 6 with Post Debridement combustion + Tangential excision + cap with Split Thickness Skin Graft (STSG) ec Raw Surface Area (RSA) 7.5%, Regio Facial-Colli, Trunk Anterior, Superior Extremitas D et S, Inferior Extremitas D et S H5 (11/4/2022), Post Debridement Auricula D And Digit II Reconstruction Manus D ec Post Burn Ear Deformity with Cartilage Exposed Auricula D Region And Vulnus Appertum digiti II Manus D Proximal Height Interphalangeal (DIP) Joint H5 (11/4/2022). Combustion Debridement History + Tangential Excision + Close with Split Thickness Skin Graft (STSG) Left Superior Extremitas Region (25/3/2022) ec RSA 15.5% Facial-Colli Region, Trunk Anterior, Superior Extremitas D et S, Inferior Extremitas D et S, Genitalia Externa ec Combustio Gr IIB-III 18.5% (Gr IIB 6%, III 12.5%) ec HVEI. History of Amputation Disarticulation at PIP Joint Digiti II, at DIP Joint Digiti III, IV, V Manus S (25/3/2022) ec Necrotic Distal Phalanx Digiti II, III, IV, V Manus Sinistra ec High Voltage Electric Injury (HVEI). Having a psychiatric disorder in the form of Organic Depressive Disorder (F06.32). The patient is found to be active and is a consul for the Plastic Surgery Peer ([Martin et al., 2007](#); [Thapar et al., 2017](#); [Antonioni et al., 2005](#)).

Conclusion

Currently, organic depression is found as a result of a change in the patient's health condition from being healthy to being sick which causes the patient to be unable to carry out activities as before. This disorder is a direct consequence of changing the patient's health situation. The diagnosis of the disease was established based on the history and physical examination, cardiology examination, plastic surgery, internal, and mental status, and supporting examinations, and based on PPDGJ III a diagnosis of Axis I was obtained as Organic Depressive Disorder (F06.32) ([Akaka et al., 2013](#); [Almutlaq et al., 2018](#)). Therapy from Peers (TS) Plastic Surgery is a therapeutic process that plays an important role in the process of the disease course and patients must follow all suggestions and recommendations from TS Plastic Surgery. Pharmacological therapy in patients at this time is to treat depression in patients by giving anti-depressants of the Tricyclic SSRI class of amitriptyline because it is effective in overcoming depression and reducing anxiety in patients so that they feel more comfortable. While non-pharmacological therapy is given supportive psychotherapy to the patient and the family is given family psychoeducation about the psychological impact that may occur due to the patient's physical illness and the role of the family is very important in treating the patient's wounds to accompanying the patient is undergoing the process of further medical rehabilitation therapy and supporting the patient in the future because at this time This is the age of the patient who is still a teenager so that later he can move independently ([Senarath-Yapa & Enoch, 2009](#)).

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