

Hepatocellular carcinoma in patients with chronic hepatitis C – case study

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Abstract

Introduction. In Poland, approximately 2% of the total population is infected with hepatitis C virus (HCV) (estimated at 730,000 people). HCV is an etiologic factor of chronic hepatitis C. Hepatitis C is a chronic disease which, when untreated, may lead to cirrhosis of the liver and/or primary liver cancer.

Objective. The aim of the study was analysis of the personal medical history of a patient with hepatocellular cancer from the aspect of infection with HCV.

Material and Method. A case of a 63-year-old patient is presented with the diagnosis of hepatocellular carcinoma (HCC) (*Carcinoma hepatocellulare*), who had undergone the procedure of thermal ablation of the pathological change in the liver. The patient was treated with chemotherapy on a daily basis; anti-HCV antibodies were detected. The research method was a retrospective case study; the technique – analysis of records (internal documentation of the Regional Hospital in Pionki, Poland; while the research tools – medical history with the results of diagnostic tests, the VAS scale and the Glasgow scale.

Results. Based on internal documentation of the hospital a case of a patient was described with severe abdominal pain due to hepatocellular carcinoma, who had been previously diagnosed with HCV infection. Physical examination was presented, as well as epidemiological interview, medical history, the course of diagnostics and treatment of the patient qualified for further ambulatory treatment in the oncology outpatient clinic.

Conclusions. Screening examinations are indicated for an early detection of the presence of anti-HCV antibodies. An early diagnosis of infection with HCV, and implementation of antiviral treatment may prevent the development of hepatocellular carcinoma.

Key words: hepatocellular carcinoma; HCV infection; complications of hepatitis C

Abbreviations: *Angio-CT: Computed tomography angiography; HCC: Hepatocellular carcinoma; HCV: Hepatitis C virus; MRI: Magnetic resonance imaging; PET: Positron emission tomography; CT: Computed tomography.*

Introduction

Liver cancer is the type of cancer which originally develops in the liver tissue and begins in hepatocytes. It is referred to as primary liver cancer – hepatocellular carcinoma (HCC) [1].

According to statistical data primary liver cancer constitutes approximately 7% of the total number of malignant cancers, and is the third cause of death due to cancerous diseases. About 850,000 new cases are diagnosed annually worldwide. In the light of conducted studies this cancer is more frequently diagnosed among males than females. From the aspect of the frequency of occurrence among males and females, globally HCC occupies the 7th and 9th position, respectively, whereas in Poland - 8th and 9th position, respectively. The highest incidence is observed in East Asia (>50% of cases in China), and in individual regions of Africa – together they account for approximately 85% of the total number of cases. In European countries the incidence is lower, apart from the southern part of the continent. According to the data by the World Health Organization, in 2019, the incidence in Poland was 3.2/100,000 annually, while nearly 800,000 people worldwide die due to hepatocellular carcinoma [1, 2, 4].

The main etiologic factor of primary liver cancer is infection with hepatitis C virus (HCV), which is characterized by oncogenic effect. A high risk of infection with HCV is caused by transfusion of blood/blood products, surgical procedure, or organ transplantation [3].

At early stages hepatocellular carcinoma develops asymptotically or paucisymptomatically. At more advanced stage may occur: jaundice, ascites, and hepatic encephalopathy. At a considerably advanced stage of the pathological process there occur: pain complaints in the area of the abdominal cavity (mainly in the right hypochondrium), loss of appetite, loss of body weight (cachexia-anorexia syndrome), and general asthenia [1].

Hepatocellular carcinoma may be diagnosed due to the methods of imaging diagnostics (non-invasive diagnostics) – CT, Angio-CT, MRI, and PET. Primary liver cancer may be diagnosed based on histopathologic examination of the tumour tissues collected during diagnostic core needle biopsy, diagnostic laparoscopy, or surgical procedure.

The available methods of treatment of HCC are: surgical treatment (resection of the liver, transplantation of the liver), ablation therapy (locally destructive methods – chemical or thermal ablation), chemotherapy, radiotherapy, and palliative treatment [5, 6, 7].

Objective

The aim of the study was analysis of individual medical records of a patient with hepatocellular carcinoma from the aspect of infection with HCV.

Material and Method

A case of a 63-year-old patient was presented with the diagnosis of hepatocellular carcinoma (HCC) (*Carcinoma hepatocellulare*), who had undergone the procedure of thermal ablation of the pathological change in the liver. The patient was treated with chemotherapy on a daily basis; anti-HCV antibodies were detected. The research method applied was a retrospective case study; the technique – analysis of archive internal documentation of the Regional Hospital in Pionki, Poland. The research tools were medical history with the results of diagnostic tests, as well as completed VAS and Glasgow scales. Medical records concerned the treatment of the patient in surgical ward during the period from 30 May 2019 – 14 June 2019 due to the attack of severe pain complaints located in the epigastric region of the abdomen.

Individual case study

A 63-year-old man admitted on 30 May 2019 at 21⁰³ to the general surgery ward at Regional Hospital in Pionki, Poland, in emergency mode. The cause of admission was sudden, severe pain in the epigastric region of the abdomen. During medical examination the patient was conscious, auto- and allopsychically oriented (obtained 15 scores/15 scores according to the Glasgow scale) – Fig. 1.



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SKALA GLASGOW
SKALA OCENY POZIOMU PRZYTOMNOŚCI

Nazwisko i imię: [REDACTED]

Data urodzenia: [REDACTED]

Adres: [REDACTED]

Data przyjęcia: **2019-05-30 21:03**

Data badania: **2019-05-30 21:06**

Wiek: **63 lata**

L. ks. oddz.: **/531/2019**

Płeć: **M**

Pesel: [REDACTED]

Telefon: [REDACTED]

L. ks. gl.: **/1554/2019**

Czynność podlegająca ocenie	Rodzaj reakcji pacjenta	Punktacja
Otwieranie oczu	Spontanicznie	4 pkt.
	Na bodźce słowne	3 pkt.
	Na bodźce bólowe	2 pkt.
	Nie otwiera oczu	1 pkt.
Kontakt słowny	Odpowiedź logiczna – pacjent zorientowany autopsychicznie oraz allopsychicznie	5 pkt.
	Odpowiedź splątana – pacjent zdeorientowany	4 pkt.
	Odpowiedź nieadekwatna, nie na temat / krzyk	3 pkt.
	Niezrozumiałe dźwięki / pojękiwanie	2 pkt.
	Bez reakcji	1 pkt.
Reakcja ruchowa	Ruchy spontaniczne – pacjent spełnia ruchowe polecenia słowne	6 pkt.
	Ruchy celowe – pacjent lokalizuje bodźce bólowe	5 pkt.
	Reakcja obronna na ból	4 pkt.
	Odkorowanie – patologiczna reakcja zgięciowa	3 pkt.
	Odmóżdzenie – patologiczna reakcja wyprostna	2 pkt.
	Bez reakcji	1 pkt.

Określanie poziomu przytomności:
3 pkt. = śmierć mózgu
4 pkt. = odmóżdzenie
5 pkt. = odkorowanie
6 pkt. – 8 pkt. = brak przytomności
9 pkt. – 12 pkt. = umiarkowane zaburzenia przytomności
13 pkt. – 15 pkt. = łagodne zaburzenia przytomności

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Pierwsza i podpis

Figure 1. Assessment of the level of patient's consciousness according to the Glasgow scale.

Source: Medical records of the Regional Hospital in Pionki, Poland.

History taking

After admission of the patient to the hospital ward his medical history was taken. Data were collected concerning the complaints associated with the present state of health. Information pertaining to the character of pain was important – severe pain under the right rib cage. Pain in the epigastric region was assessed according to the VAS scale to be on the level of 10 scores – Fig. 2.

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SKALA WZROKOWO – ANALOGOWA
SKALA OCENY POZIOMU DOLEGLIWOŚCI BÓLOWYCH

Nazwisko i imię: _____ Płeć: **M**
Data urodzenia: _____ Wiek: **63 lata** Pesel: _____
Adres: _____ Telefon: _____
Data przyjęcia: **2019-05-30 21:03** L. ks. oddz.: **/531/2019** L. ks. gl.: **/1554/2019**
Data badania: **2019-05-30 21:09**

SKALA BÓLU



Określanie poziomu dolegliwości bólowych:
0 pkt. – 3 pkt. = **brak bólu**
4 pkt. – 7 pkt. = **umiarkowany poziom bólu**
8 pkt. – 10 pkt. = **silny poziom bólu**

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Leczący Przewodzący
20190530
Pozycja i podpis

Figure 2. Assessment of intensity of pain in the epigastric region of the abdomen acc. To the VAS scale.

Source: Medical records of the Regional Hospital in Pionki, Poland.

Information was collected from the patient concerning food tolerance – poor wellbeing after abundant meals. The patient described general poor wellbeing prior to admission to hospital as bad, discomfort due to pain, and the feeling of an enlarged liver, sometimes accompanied by nausea and vomiting. The interview concerned the to-date surgical and conservative treatment, medications taken constantly, as well as ambulatory care in specialist outpatients. The examination included social and family interview, dietary treatment, and epidemiological interview.

On 18 February 2019 patient had undergone the procedure of thermal ablation of the pathological change in the liver, performed in the Independent Public Health Care Unit of the Ministry of Interior and Administration (MSWiA) in Lublin. The procedure involved reaching the tumour percutaneously using a special electrode, which by generating high frequency currents caused an increase in temperature up to approx. 60-70 °C. In a strictly determined area, on the principle of overheating, there occurred the exfoliation of the tumour tissue.

During the procedure material was collected for histopathologic examination. The result of histopathologic examination confirmed hepatocellular carcinoma; C22.0. After making the diagnosis the patient received treatment with Nexavar 200 mg, p.o.

On 1 April 2019 the patient was diagnosed in the Independent Public University Hospital No 4 in Lublin. CT scan was performed of the chest, abdomen and pelvis. Based on the CT result a tumorous change was found of the size 63 x 69 in the caudate lobe of the liver. In addition, based on the CT scan symptoms of pulmonary embolism were observed.

On 11 April 2019 the patient was hospitalized within one day procedure in the clinical oncology ward, with the sub-ward for daytime chemotherapy at the Regional Cancer Centre in Lublin. Specialist treatment was applied (chemotherapy). One dose of Nexavar 200 mg, p.o. was applied and the patient was discharged home in a good general condition. He was recommended to observe the prescribed drugs, daily intake of 2 litres of fluids, consumption of easy to digest foods, to lead a sparing life style, and to report again on 10 May 2019 to the sub-ward for daytime chemotherapy for the continuation of treatment due to hepatocellular carcinoma.

Epidemiological interview

The patient reported that more than 20 years ago he had undergone an abdominal surgery (hernia); however he did not enclose any medical records confirming this surgery. The patient mentioned that in February 2019, in the Independent Public Health Care Unit of the Ministry of Interior and Administration (MSWiA) in Lublin, during preparation for the procedure of thermal ablation of changes in the liver the presence of anti-HCV antibodies was detected. Then, the attending physician informed the patient about the diagnosis of chronic hepatitis C in association with HCV infection in the past.

Physical examination

The diagnosis was as follows: mediocre general condition, slim build, dry properly warm skin, peripheral lymph nodes not enlarged, head and neck normal, chest, lungs and heart unchanged, abdomen soft, knobby changed liver palpable in the right epigastric region, male urogenital system normal, osteoarticular system normal, no meningeal signs. In the remaining examinations no observable pathologies were found. Vital signs were as follows: arterial blood pressure: 120/80 mmHg; heart rate: 84 bpm; body temperature: 36.2 °C; body weight: 60 kg, height: 172 cm, BMI was: 20.28 (normal body weight).

Course of treatment

On 30 May 2019 – on the day of admission of the patient to hospital, biochemical blood tests were performed on stat basis which allowed assessment of the hepatic function:

- AlAT: 96 (U/L); normal [< 41]
- AspAT: 140 (U/L); normal [< 37]
- enzyme GGTP: 514 (U/L); normal [< 49]
- enzyme LDH: 250 (U/L); normal [135-225].

On 4 June 2019 – the patient had CT scan of the abdomen and minor pelvis performed – Fig. 3.

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Data wystawienia: 2019-06-04

TK BRZUCHA BEZ I Z KONTRASTEM
TK MIEDNICY MAŁEJ BEZ I Z KONTRASTEM

Nazwisko i imię: [redacted] Płeć: **M**
Data urodzenia: [redacted] Wiek: **63 lata** Pesel: [redacted]
Adres: [redacted] Telefon: [redacted]
Data przyjęcia: **2019-05-30 21:03** L. wyk. oddz.: **/531/2019** L. wyk. gł.: **/1554/2019**
Data wypisu: **2019-06-14 13:00**

BADANIA OBRAZOWE/DIAGNOSTYCZNE:

[2019-06-04] : TK BRZUCHA BEZ I Z KONTRASTEM
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Brak dokumentacji obrazowej poprzednich badań do porównania. Dostarczono opis badania TK z 01.04.2019r.

Płyn w j. otrzewnej otacza narządy mięsiste i obecny jest międzypęłowo. W porównaniu z opisem badania poprzedniego płynu jest znacznie więcej. Podwyższona gęstość tkanki tłuszczowej wewnątrzotrzewnowej.

Wątroba powiększona, prawy płat dł. cc 208 mm. Gęstość wątroby jest niejednorodna, z klinowatymi ubytkami zakontrastowana podtorbikowo w płacie prawym- zaburzenia ukrwienia po termoablacji lub następstwie zakrzepicy ż. wrotnej. Materiał zakrzepowy w dystalnych odcinkach gałęzi płatowych i w początkowej części pnia ż. wrotnej.

Ubytki zakontrastowania w z. kręzkowej górnej i jej dopływach. Liczne naczynia krążenia obocznego w zakresie badania j. brzusznej. W płacie ogoniastym wątroby guz o wy. 70 x 52 x 70 mm, wydaje się być podobnej wielkości jak w opisie poprzedniego badania. Poza tym o obu płatach wątroby kilka mniejszych ognisk o charakterze meta śr. do 24 mm.

Widoczne węzły chłonne śr. ok. 10 mm we wnętrze wątroby, w nadbrzuszu i pojedyncze okołoaortalne zaotrzewnowo.

Pęcherzyk żółciowy obkurczony. Drogi żółciowe nieposzerzone.

Trzustka prawidłowa.

Śledziona niepowiększona, jednorodna.

Obraz obu nerek i nadnerczy prawidłowy.

Nie stwierdza się ognisk meta w układzie kostnym i mięszu płucnym w zakresie badania.

/lek. med. [redacted] specjalista radiolog

Osoba realizująca: LEKARZ ZEWNĘTRZNY - PODWYKONAWCA

Data wypisu: 2019-06-14 13:00
TK brzucha bez i z kontrastem
TK miednicy małej bez i z kontrastem: [redacted]

Strona 1 z 1

z wykorzystaniem systemu COMARCH Healthcare

Figure 3. Result of imaging test – CT scan of the abdomen and minor pelvis.

Source: Internal documentation of the Regional Hospital in Pionki, Poland.

The CT scan of the abdomen revealed: enlarged liver, the length of the right liver lobe 208 mm. Liver density heterogenous, with wedge-shaped contrast-enhanced subcapsular lesions.

In the right liver lobe – blood flow disorders after thermal ablation or as a result of portal vein thrombosis. Thrombotic material found in distal parts of the lobar branches and in the initial part of the portal vein trunk. Contrast losses in the superior mesenteric vein and its venous tributaries. Multiple collateral vessels in examination of the abdominal cavity. In the caudate lobe of the liver a tumour of the size of 70 x 52 x 70 mm – seems to be of the size similar to that in the description in the previous examination performed on 1 April 2019). Apart from this, in both lobes of the liver several smaller foci of the diameter up to 24 mm. Visible lymph nodes of the diameter of approximately 10 mm in the hilum of the liver, in the epigastric region, and single periaortic lymph nodes in the retroperitoneal space. Fluid in the peritoneal cavity surrounding parenchymal organ present in the interlopal space. Compared to the description of the previous scan the amount of fluid considerably increased. Increased density of adipose intraperitoneal tissue. Contracted gallbladder. Bile ducts not dilated. Normal pancreas. Spleen not enlarged, homogeneous. Normal image of the kidney and adrenal glands. In CT scan no metastatic foci observed in the skeletal system and lung parenchyma.

On 6 June 2019, after a week of hospitalization liver function tests were repeated which confirmed a slight improvement of the liver function:

- AlAT: 59 (U/L)
- AspAT: 98 (U/L)
- enzyme GGTP: 443 (U/L).

During the period from 30 May 2019 – 14 June 2019 the patient received conservative treatment. The patient's pain complaints were alleviated, and his general wellbeing improved. Conservative treatment was applied: Acard 75 mg, p.o.; Atoris 40 mg, p.o.; Beto ZOK 50 mg, p.o.; Controloc 40 mg, i.v.; Clexane 40 mg, s.c.; Dolcontral 50 mg, s.c.; 5% Glucosum 500 ml, i.v.; Hydroxyzinum 25 mg, p.o.; M.F. 5 mg, s.c.; Ringer's solution 500 ml, i.v.; Optilyte 500 ml, i.v.; Poltram 50 mg, s.c.; Tritace 2.5 mg, p.o.; Ondansetron 4 mg, i.v.

On 14 June 2019 at 13⁰⁰ the patient was discharged home in a good general condition. Further oncologic treatment was recommended in ambulatory conditions. Apart from this, the patient was instructed about health promoting life style, with particular consideration of the limitation of physical effort, and observance of dietary recommendations.

Conclusions

1. Screening examinations are necessary for an early detection of the presence of anti-HCV antibodies.
2. An early diagnosis of infection with HCV and implementation of antiviral treatment may prevent the development of hepatocellular carcinoma.

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