

Slučaj veneričnog sifilisa u novovjekovnom horizontu grobova kraj crkve Svetog Lovre u Crkvarima

A Case of Venereal Syphilis in the Modern Age Horizon of Graves near the Church of St. Lawrence in Crkvari

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U radu je analiziran kostur žene stare između 41 i 45 godina iz groba 40 s groblja uokolo crkve Sv. Lovre u Crkvarima kraj Orahovice. Kostur se datira u novovjekovni sloj ukapanja, s tim da datiranje radioaktivnim ugljikom daje granice između 1478. i 1636. godine. Na kosturu su prisutne patološke promjene koje su karakteristične za prisutnost veneričnog sifilisa. Radi se o jakim, aktivnim i generaliziranim upalnim procesima koji su zahvatili gotovo čitav kostur, a posebno jako su izraženi na kostima potkoljenice. Diferencijalna dijagnoza isključila je mogućnost da su uzročnici ovih promjena lepra, tuberkuloza, neke vrste osteomijelitisa i dvije druge vrste treponematoza (bejel i frambezija).

Povijesni podaci o pojavi sifilisa u Slavoniji tijekom turske vladavine u ovom trenutku još nisu otkriveni. S obzirom na neposrednu blizinu Mađarske te na pretpostavku da su sifilis u Mađarsku donijeli španjolski vojnici tijekom 16. i 17. st., postoji mogućnost da je venerični sifilis kojim je zaražena žena iz Crkvara došao odatle. Pretpostavka da su sifilis u Europu prenijeli Kolumbo i njegova posada s prvog putovanja iz Amerike morat će se ponovo kritički razmotriti s obzirom na to da je danas poznat velik broj dobro dokumentiranih pretkolumbovskih slučajeva sifilisa u Europi. Na kraju, naglašava se potreba za dodatnim istraživanjima u arhivima i na koštanom materijalu kako bi se identificirali izvori i pravci širenja sifilisa i drugih zaraznih bolesti na tlu Hrvatske.

Ključne riječi: sifilis, treponematoze, Slavonija, novi vijek

This work presents an analysis of the skeleton of a woman between 41 and 45 years of age from grave 40 of the cemetery around the church of St. Lawrence in Crkvari near Orahovica. The skeleton is dated to the Modern Age layer of burials, and radiocarbon dating gives limits between 1478 and 1636. The skeleton contains pathological modifications characteristic for the presence of venereal syphilis. These consist of strong, active and generalized inflammatory processes that affected almost the entire skeleton, and which are particularly prominent on the lower leg bones. A differential diagnosis excluded the possibility that the agents of these modifications are leprosy, tuberculosis, certain types of osteomyelitis and two other types of treponematoses (bejel and frambesia).

The historical data on the emergence of syphilis in Slavonia during the Turkish rule have not been discovered yet. Taking into consideration the immediate vicinity of Hungary, and the assumption that syphilis was brought to Hungary by Spanish soldiers during the 16th and 17th centuries, it is possible that this is where the venereal syphilis that infected the woman from Crkvari came from. The assumption that syphilis was brought to Europe by Columbus and his crew from their first voyage from America will have to be critically reassessed, considering that today many well documented cases of syphilis in Europe before Columbus are known. Finally, the need is stressed for additional research in the archives and on the bone material in order to identify the sources and directions of the spread of syphilis and other infectious diseases in the territory of Croatia.

Key words: syphilis, treponematoses, Slavonia, the Modern Age

UVOD

Treponematoze su skupina bakterijskih infekcija čiji je uzročnik bakterija iz roda *Treponema*. Danas se razlikuju četiri tipa treponematoza: venerični sifilis (stečeni ili kongenitalni), frambezija, pinta i endemični sifilis (bejel). Sve bolesti, osim pinte, mogu ostaviti tragove na kostima. Venerični sifilis prenosi se spolnim kontaktom s osobom zaraženom bakterijom *Treponema pallidum*. Ta bolest ponajprije napada krvožilni i živčani sustav, a najčešće se manifestira na kostima potkoljenice i na lubanji (Manchester 1983).

O izvorima i smjerovima širenja treponematoza dugo se vode rasprave. Danas su aktualne tri teorije: 1) kolumbovska teorija zastupa mišljenje kako je venerični sifilis potekao iz Amerika, a da je u Europi bio nepoznat sve dok ga Kristofor Kolumbo i njegova posada nisu donijeli sa svog prvog putovanja 1493. god. (Harrison 1959; Dennie 1962; Goff 1967; Crosby 1969; Baker, Armelagos 1988); 2) pretkolumbovska teorija zastupa mišljenje kako je sifilis bio prisutan u Europi prije Kolumbovih putovanja, ali da se klinički nije razlikovao od lepre i nekih drugih zaraznih bolesti (Holcomb 1930; Holcomb 1934; Hackett 1963; Hackett 1967; Cockburn 1961; Kampmeier 1984); 3) unitarijanska teorija pretpostavlja kako su treponematoze dugo prisutne i u Starom i u Novom svijetu, a da su se četiri sindroma razvila u različitim geografskim područjima kao odgovor na lokalne ekološke i socijalne uvjete (Hudson 1958; 1963; 1965; 1968).

U ovom radu bit će opisan slučaj veneričnog sifilisa koji u ovom trenutku predstavlja kronološki najranije evidentiranu treponematozu u Hrvatskoj sjeverno od Save. Uzimajući u obzir geografski položaj, dataciju analiziranog uzorka kao i vrlo malobrojne i oskudne povijesne izvore, pokušat će se ustanoviti pravac širenja sifilisa iz Europe u Hrvatsku. Na kraju će autori iznijeti svoje mišljenje o aktualnim teorijama o izvorima i smjerovima širenja treponematoza u svijetu, s obzirom na stanje istraženosti te problematike.

MATERIJAL I METODE

Kostur analiziran u ovom radu potječe s groblja smještenog uz crkvu Sv. Lovre u Crkvarima kraj Orahovice. Gotička, kasnije barokizirana, crkva podignuta je na izdvojenom brežuljku uz selo Crkvari, a neposredno uokolo nje prostiralo se srednjovjekovno groblje (Tkalčec 2006). Do danas su provedene četiri sezone istraživanja (2003.-2006.), pod vodstvom Instituta za arheologiju iz Zagreba. Prve dvije godine istraživanja vodio je prof. dr. sc. Željko Tomičić (Tomičić et al. 2004; Tomičić, Tkalčec 2004), a trećom i četvrtom sezonom rukovodila je mr. sc. Tatjana Tkalčec (Tkalčec 2005; Tkalčec 2006). Do danas je otkriveno 140 grobova koji se mogu podijeliti u tri sloja: 1) najstariji horizont koji se najvjerojatnije može datirati u 12. i 13. st.; 2) srednji sloj koji traje do kraja 15. st.; 3) novovjekovni sloj ukapanja koji traje do kraja 17. st. (Tomičić, usmeni podatak; Tkalčec 2006).

Koštani uzorak analiziran u ovom radu potječe iz groba 40 (U-173) i kronološki se smješta u treći, novovjekovni sloj koji se datira u razdoblje između 16. i 17. st. Dataciju prema arheološkim nalazima potvrđuje i analiza radioaktivnim ugljikom provedena u laboratoriju za radiometrijska datiranja i istraživanja stabilnih izotopa Leibniz, Sveučilište u Kielu. Za analizu su korišteni kalibrirani datumi prema Stuiveru i sur.

INTRODUCTION

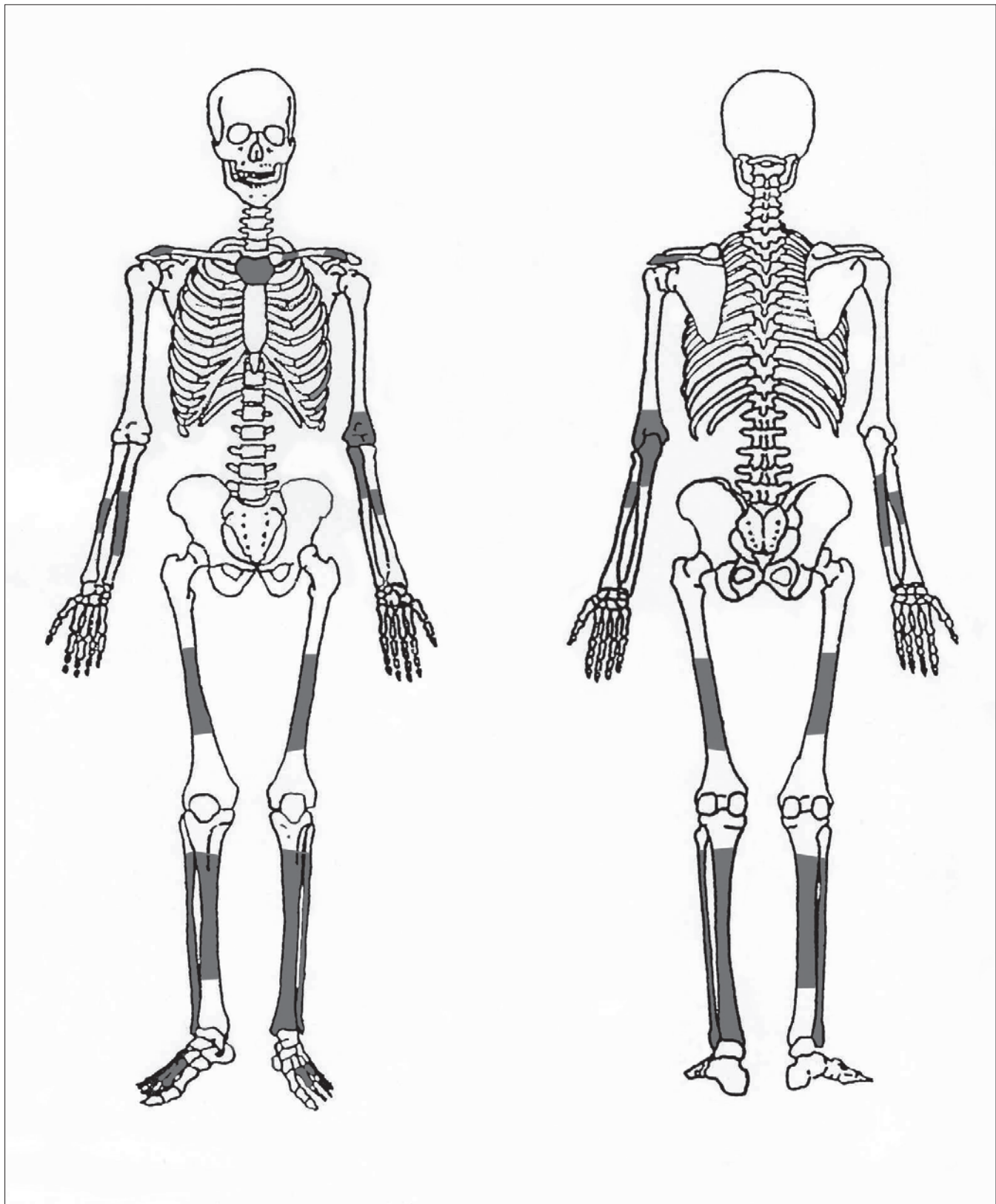
Treponematoses are a group of bacterial infections whose agent is a bacterium from the genus *Treponema*. Four types of treponematoses are distinguished today: venereal syphilis (acquired or congenital), frambesia, pinta and endemic syphilis (bejel). All the diseases, except pinta, can leave traces on the bones. Venereal syphilis is transmitted by sexual contact with a person infected with the bacterium *Treponema pallidum*. This disease primarily attacks the blood-vascular and nervous systems, and it is most frequently manifested on the lower leg bones and on the skull (Manchester 1983).

The sources and directions of the spread of treponematoses have been discussed for a long time. Three theories are current today: 1) the Columbian theory holds that venereal syphilis stems from the Americas, and that it was unknown in Europe until Christopher Columbus and his crew brought it from their first voyage in 1493 (Harrison 1959; Dennie 1962; Goff 1967; Crosby 1969; Baker, Armelagos 1988); 2) the pre-Columbian theory advocates the opinion that syphilis was present in Europe prior to Columbus' voyages, but that clinically it was not distinguished from leprosy and certain other infectious diseases (Holcomb 1930; Holcomb 1934; Hackett 1963; Hackett 1967; Cockburn 1961; Kampmeier 1984); 3) the unitarian theory assumes that treponematoses have been present for a long time in both the Old and the New Worlds, and that the four syndromes developed in different geographic regions as responses to local ecological and social conditions (Hudson 1958; 1963; 1965; 1968).

In this work we will describe a case of venereal syphilis that is currently the earliest registered treponematoses in Croatia north of the Sava. Taking into consideration the geographic position, the dating of the analyzed sample as well as the very small number and scarcity of historical sources, an attempt will be made to ascertain the direction of the spread of syphilis from Europe to Croatia. Finally, the authors will put forward their opinion about the current theories regarding the origins and directions of spread of treponematoses in the world, with respect to the state of research of that topic.

THE MATERIAL AND METHODS

The skeleton analyzed in this work comes from the cemetery lying next to the church of St. Lawrence (Sv. Lovro) in Crkvari near Orahovica. A Gothic, later turned baroque-style church was erected on a detached hill near the village of Crkvari, while a medieval cemetery extended in its immediate surroundings (Tkalčec 2006). Four excavation campaigns have been carried out so far (2003-2006), managed by the Institute of Archaeology in Zagreb. The first two excavation campaigns were directed by Prof. Željko Tomičić (Tomičić et al. 2004; Tomičić, Tkalčec 2004), while the third and the fourth campaigns were led by Tatjana Tkalčec, M.Sc. (Tkalčec 2005; Tkalčec 2006). A total of 140 graves have been discovered so far and can be divided



Sl. 1 Shematski prikaz kostiju zahvaćenih patološkim promjenama. Zatamnjeni dijelovi predstavljaju promjene na kostima koje su konzistentne s veneričnim sifilisom

Fig. 1 A schematic representation of the bones affected by pathological changes. The shaded parts represent alterations on the bones consistent with venereal syphilis



Sl. 2 Jaki aktivni upalni proces na distalnoj polovici dijafize lijeve goljениčne i lisne kosti

Fig. 2 A strong inflammatory process on the distal half of the diaphyses of the left shin and calf bones

(1998) na temelju kojih se ukop kostura sa sigurnošću od 95,4% (345 ± 23 BP) datira u razdoblje između 1478. i 1636.

Koštani materijal analiziran je u osteološkom laboratoriju Odsjeka za arheologiju Hrvatske akademije znanosti i umjetnosti. Kostur je pregledan makroskopski, pod snopom jakog svjetla. Spol i starost određeni su standardnim metodama opisanim u Bassu (1987).

REZULTAT

Analizirana osoba potječe iz groba 40 (U-173) koji se datira u novi vijek, tj. između 1478. i 1636., kada se Slavonija nalazila pod turskom vlašću. Riječ je o odrasloj ženi koja je doživjela starost između 41 i 45 godina. Ušćuvanost kostura vrlo je dobra, s manjim postmortalnim oštećenjima glave i rebara.

Na sl. 1 shematski su prikazane kosti zahvaćene patološkim promjenama. Riječ je o jakim, aktivnim upalnim procesima koji su zahvatili gotovo čitav kostur. Lezije su najuočljivije na dugim kostima, posebno na potkoljenicama (goljениčne i lisne kosti).

Na acromionu lijeve lopatice prisutan je aktivni

into three layers: 1) the earliest horizon that can most probably be dated to the 12th and 13th centuries; 2) the middle layer lasting until the end of the 15th cent.; 3) the Modern Age layer of burial, lasting until the end of the 17th cent. (Tomičić, personal communication; Tkalčec 2006).

The bone sample analyzed in this paper comes from grave 40 (U-173) and is chronologically placed in the third, Modern Age horizon, dated to the period between the 16th and 17th centuries. The dating by archaeological finds is corroborated by the radiocarbon analysis carried out in the Leibniz Laboratory for Radiometric Dating and Isotope Research, University in Kiel. The analysis used the calibrated dates according to Stuiver et al. (1998) on the basis of which the skeleton burial is dated with 95,4% certainty (345 ± 23 BP) to the period between 1478 and 1636.

The bone material was analyzed in the osteological laboratory of the Department of Archaeology of the Croatian Academy of Sciences and Arts. The skeleton was examined macroscopically under a beam of bright light. The sex and age were determined by standard methods described in Bass (1987).

THE RESULT

The analyzed person comes from grave 40 (U-173), dated to the Modern Age, more precisely between 1478 and 1636, when Slavonia was under Turkish rule. The person is an adult woman who reached the age between 41 and 45. The preservation of the skeleton is very good, with minor postmortem damage to the head and ribs.

Fig. 1 shows a schematic view of the bones affected by pathological alterations, consisting of strong, active inflammatory processes that affected almost the entire skeleton. The lesions are most conspicuous on the long bones, those of the lower leg in particular (shin and calf bones).

Active osteomyelitis is present on the acromion of the left shoulder blade, which resulted in partial perforation of the acromion and the emergence of a new bone in the form of irregular spikes (spiculae). The alterations also affected the clavicles: the anterior side of the left clavicle carries a lesion measuring 8 x 4 mm with a sclerotic base and remodeled edges, and along the entire length of the right clavicle runs a moderate spindly swelling accompanied by mild healed periostitis. Active osteomyelitis is present on the anterior side of the breastbone (manubrium), manifested by a lithic lesion with sharp edges and a sclerotic base measuring 7 x 3 mm. The outer side of the 7th and 8th left rib has a moderate swelling of the bone accompanied by mild active periostitis.

Active osteomyelitis, manifested as a mild swelling of the bone, is present on the posterior side of the distal third of the diaphysis of the left upper arm bone. It is complemented by mild active periostitis, and the medullary canal is closed almost up to a half by sclerotic trabeculae. Strong active osteomyelitis is present also on the elbow bones, and it is particularly prominent on the middle third of the diaphysis of the right bone, where it is manifested as a pro-

osteomijelitis koji je rezultirao djelomičnom perforacijom acromiona i pojavom nove kosti u obliku nepravilnih trnova (spikula). Promjene su zahvatile i ključne kosti: na anteriornoj strani lijeve ključne kosti prisutna je lezija veličine 8 x 4 mm sklerotičnog dna i remodeliranih rubova, a na čitavoj dužini desne ključne kosti prisutno je umjereno vretenasto zadebljanje praćeno blagim zraslim periostitisom. Na anteriornoj strani prsne kosti (manubriuma) prisutan je aktivni osteomijelitis koji se manifestira litičkom lezijom oštih rubova i sklerotičnog dna veličine 7 x 3 mm. Na vanjskoj strani 7. i 8. lijevog rebra prisutno je umjereno zadebljanje kosti praćeno blagim aktivnim periostitisom.

Na posteriornoj strani distalne trećine dijafize lijeve nadlaktične kosti prisutan je aktivni osteomijelitis koji je izražen blagim zadebljanjem kosti, praćeno blagim aktivnim periostitisom, a medularni kanal je gotovo do polovice zatvoren sklerotičnim trabekulama. Jaki aktivni osteomijelitis prisutan je i na lakatnim kostima, a naročito je izražen na srednjoj trećini dijafize desne kosti gdje se manifestira kao naglašeno vretenasto zadebljanje praćeno tvorevinama nove periostalne kosti. Na palčanim kostima posebno je, pak, izražen na desnoj strani gdje je prisutan po čitavoj dužini dijafize, posebice na distalnoj trećini gdje je prisutno naglašeno vretenasto zadebljanje kosti. Umjereno koncentrično zadebljanje korteksa kosti praćeno osteitisom prisutno je na srednjim trećinama dijafiza obje bedrene kosti, gdje su vidljivi i karakteristični „snail tracks“.

Na lijevoj goljeničnoj kosti jaki aktivni osteomijelitis zahvaća čitavu kost, ali je najaglašeniji na distalnoj trećini gdje su prisutne ekspanzivne lezije s površinskim kavitacijama okružene aktivnim periostitisom (sl. 2). Spomenute kavitacije imaju grubo dno, ali izremodelirane rubove, što sugerira da je zaražena osoba dulje vrijeme bolovala od sifilisa. Na desnoj goljeničnoj kosti upalni proces nešto je blaži nego na lijevoj, a očituje se kao blago zadebljanje proksimalne polovice dijafize kosti praćeno blagim aktivnim periostitisom. Na mnogim mjestima prisutne su tvorevine nove hipervaskularizirane kosti koje su izdignute od ostatka korteksa.

Promjenama koje su konzistentne s veneričnim sifilisom najintenzivnije su zahvaćene lisne kosti: na distalnim trećinama obje kosti prisutan je jaki aktivni osteomijelitis koji se očituje u obliku umjerenog vretenastog zadebljanja dijafiza i litičkih lezija s površinskim kavitacijama praćenih jakim aktivnim periostitisom koje su uzrokovala znatnu destrukciju korteksa kosti. Uočene su i tvorevine nove kosti koje se javljaju u obliku oštih trnova (spikula).

Na tri lijeve i dvije desne metatarzalne kosti također je prisutan upalni proces koji se iskazuje u obliku blagog zadebljanja dijafiza kosti praćenog blagim, zraslim periostitisom.

RASPRAVA

Raspored i morfologija lezija analiziranih na kosturu iz groba 40 iz Crkvara upućuju na kroničnu i sistematsku bolest. Sve promjene konzistentne su s veneričnim sifilisom, ali postoje još neke bolesti koje teoretski mogu uzrokovati slične promjene na kostima. Diferencijalno dijagnostički valja isključiti neke vrste osteomijelitisa, lepru, tuberkulozu i dvije druge vrste treponematoza (bejel i frambezija).

nounced spidly swelling complemented by the formation of new periosteal bone. On the radii it is particularly manifest on the right side, where it is present along the length of the diaphysis, particularly on the distal third, which exhibits pronounced spidly swelling of the bone. A moderate concentric swelling of the bone cortex complemented by osteitis is present on the middle thirds of the diaphyses of both thigh bones, where characteristic “snail tracks” are also visible.

Strong active osteomyelitis affects the entire left shin bone, but it is most prominent on the distal third, where expansive lesions with superficial cavitations are present, surrounded by active periostitis (Fig. 2). The mentioned cavitations have a rough base but remodeled edges, suggesting that the infected person suffered from syphilis for a long time. The inflammatory process on the right shin bone is somewhat milder than on the left one, and it is manifested as a slight swelling of the proximal half of the bone diaphysis, complemented by mild active periostitis. The formation of a new hypervascularized bone, raised above the rest of the cortex, is present in several places.

Alterations consistent with venereal syphilis most intensively affected the fibulae: the distal thirds of both bones show the presence of strong active osteomyelitis manifested in the form of a moderate swelling of the diaphyses and lithic lesions with superficial cavitations accompanied by strong active periostitis that caused considerable destruction of the bone cortex. The formation of new bone has been noticed, appearing in the shape of sharp spikes (spiculae).

Three left and two right metatarsal bones likewise show the presence of an inflammatory process manifest in the shape of a slight swelling of bone diaphyses accompanied by mild, healed periostitis.

DISCUSSION

The position and morphology of the lesions analyzed on the skeleton from grave 40 from Crkvari point to a chronic and systematic disease. All alterations are consistent with venereal syphilis, but there are some other diseases that can in theory cause similar alterations on bones. A differential diagnosis showed that we can exclude certain types of osteomyelitis, leprosy, tuberculosis and two other types of treponematoses (bejel and frambesia).

Primary osteomyelitis is excluded due to the fact that the macroscopic examination of the affected bones did not reveal pathological changes of a local character; rather, what we have here is a generalized process. There can also be no talk of acute hematogenous osteomyelitis, because it mostly appears in children (Ortner, Putschar 1985). Traumatic osteomyelitis is similarly not probable due to the fact that most alterations are bilateral and because osteological indicators of traumas are absent (calluses, angulations and asymmetries in the length of the diaphyses of the antimeres).

Leprosy is implausible because in this disease the nose,

Primarni osteomijelitis isključen je zbog činjenice da makroskopski pregled zahvaćenih kostiju nije otkrio patološke promjene lokalnog karaktera, već se radi o generaliziranom procesu. Ne može biti riječi niti o akutnom hematogenom osteomijelitisu, jer se on najčešće javlja kod djece (Ortner, Putchar 1985). Traumatski osteomijelitis također nije vjerojatan zbog činjenice da je većina promjena bilateralno i zbog toga što nedostaju osteološki pokazatelji trauma (kalusi, angulacije i asimetrije u duljini dijafiza antimerama).

Lepra je malo vjerojatna jer su kod nje područje nosa, falange ruku i nogu, kao i kosti šake najčešće zahvaćeni patološkim promjenama (Steinbock 1976; Ortner, Putchar 1985; Rogers, Waldron 1989; Manchester 1983; Roberts 1994), što nije slučaj kod osobe iz Crkvara. Lepra je također malo vjerojatna zbog toga što je za nju izuzetno neuobičajen periostitis na gotovo svim postkranijalnim kostima (Ortner, Putchar 1985; Aufderheide, Rodriguez-Martin 1998), a to je slučaj s ovdje analiziranim kosturom.

Tuberkuloza najčešće uzrokuje promjene na kralješcima i pleuralnim strana rebra (Steinbock 1976; Ortner, Putchar 1985; Rogers, Waldron 1989; Ortner 2003) koji su kod ove osobe zdravi. Hipertrofija dijafiza dugih kostiju, toliko naglašena na ovom kosturu, također je vrlo rijetka kod tuberkuloze (Aufderheide, Rodriguez-Martin 1998).

Još neke vrste treponematoza, kao što su frambezija i bejel, mogu ostaviti promjene na kostima slične onima koje izaziva venerični sifilis. Bejel je akutna bolest djece koja se prenosi izravnim ili neizravnim kontaktom s inficiranom lezijom ili sluznicom (Steinbock 1976; Aufderheide, Rodriguez-Martin 1998), a najčešće se pojavljuje u suhim subtropskim područjima sjeverne Afrike i Bliskog istoka (Steinbock 1976; Ortner 2003). S obzirom na to da je u uzorku iz Crkvara riječ o odrasloj osobi i da se lokalitet nalazi daleko od subtropskih područja, bejel se može isključiti s liste potencijalnih oboljenja. Uzročnik frambezije, *Treponema pertenu*, prilagođen je, pak, razvoju u vlažnim tropskim uvjetima (Mays et al. 2003) i kao takav ne bi mogao preživjeti u ekološkim uvjetima koji vladaju na području kontinentalne Hrvatske.

Diferencijalne dijagnoze iznesene u ovome poglavlju mogu s velikom mjerom sigurnosti potvrditi da je osoba iz Crkvara bila zaražena veneričnim sifilisom. Pitanje koje se na kraju postavlja jest: kako je venerični sifilis dospio u Slavoniju?

O pravcima širenja i vremenu dolaska sifilisa u Hrvatsku podaci iz povijesnih izvora dosta su oskudni. Prvi pisani izvori o sifilisu u Hrvatskoj potječu iz sredine 16. st. iz Dubrovnika, gdje je u to vrijeme boravio Lusitanus Amatus, jedan od najvećih liječnika svog vremena, u čijim su zapisima između ostaloga opisani i slučajevi sifilisa koje je liječio (Glesinger 1940; Grmek 1955). Za kontinentalnu Hrvatsku ne postoje izvori iz vremena prije protjerivanja Turaka krajem 17. st. Prve podatke donosi L. Thaller (1927) koji spominje varaždinskog liječnika Mihajla Hinterholzera koji je oko 1750. god. liječio ženu oboljelu od veneričnog sifilisa.

Povijest sifilisa u Slavoniji tijekom turske vladavine zbog potpunosti odsutnosti pisanih izvora za sada nepoznata. No s obzirom na neposrednu blizinu Mađarske, postoji mogućnost

and phalanges of the hands and feet, are most often affected by pathological alterations (Steinbock 1976; Ortner, Putchar 1985; Rogers, Waldron 1989; Manchester 1983; Roberts 1994), which is not the case with the person from Crkvari. Leprosy is also improbable due to the fact that periostitis on almost all postcranial bones is exceedingly unusual for it (Ortner, Putchar 1985; Aufderheide, Rodriguez-Martin 1998), which is the case with the skeleton analyzed here.

Tuberculosis mostly causes alterations on vertebrae and pleural sides of the ribs (Steinbock 1976; Ortner, Putchar 1985; Rogers, Waldron 1989; Ortner 2003), which are in good condition in this individual. Hypertrophied diaphyses of the long bones, so prominent on this skeleton, are likewise very rare in tuberculosis (Aufderheide, Rodriguez-Martin 1998).

Certain other types of treponematoses, such as frambesia and bejel can also produce changes on bones similar to those caused by venereal syphilis. Bejel is an acute children's disease transmitted by direct or indirect contact with an infected lesion or mucosa (Steinbock 1976; Aufderheide, Rodriguez-Martin 1998), mostly appearing in the dry subtropical areas of northern Africa and the Near East (Steinbock 1976; Ortner 2003). Considering that the sample from Crkvari comes from an adult and that the site lies far from subtropical areas, bejel can be excluded from the list of potential diseases. The causative agent of frambesia, *Treponema pertenu*, is adapted to humid tropical conditions (Mays et al. 2003) and as such would not survive in the ecological conditions prevailing in the territory of continental Croatia.

The differential diagnoses put forward in this chapter confirm to a large degree that the person from Crkvari was infected with venereal syphilis. The question that arises is: how did venereal syphilis reach Slavonia?

There is a scant body of information from historical sources, regarding the direction of the spread and the time of arrival of syphilis in Croatia. The first written sources about syphilis in Croatia come from mid-16th cent. Dubrovnik. This is where Lusitanus Amatus, one of the greatest physicians of his time, resided and his written accounts describe among other things also the cases of syphilis he treated (Glesinger 1940; Grmek 1955). There are no sources for continental Croatia prior to the expulsion of the Turks towards the end of the 17th cent. The first data was provided by L. Thaller (1927), who mentions a Varaždin physician, Mihajlo Hinterholzer, who treated a woman suffering from venereal syphilis around 1750.

Due to the complete absence of written sources, the history of syphilis in Slavonia during Turkish rule is presently unknown. However, considering the immediate vicinity of Hungary, it is possible that it is from there that syphilis was brought. In their work on the emergence of congenital syphilis in central Hungary (at the beginning of the 17th cent.) M. Ferencz and L. Józsa (1990) state that syphilis was brought to Hungary by the Spanish mercenaries of Charles V, present in that area during the 16th and 17th centuries.

da je sifilis prenesen iz tih prostora. Naime, u svome radu o pojavi kongenitalnog sifilisa u središnjoj Mađarskoj (početkom 17. st.), M. Ferencz i L. Józsa (1990) napominju da su sifilis u Mađarsku donijeli španjolski plaćenici Karla V., kojih je tijekom 16. i 17. st. na tom području bilo na tisuće. Ti isti plaćenici pojavljuju se i u Slavoniji, pa tako N. Budak i sur. (2003) navode brojku od 1500 španjolskih vojnika prisutnih na ovom području 20-ih godina 16. st.

Ovi podaci sugeriraju dva moguća scenarija: 1) sifilis je tijekom 16. st. došao iz Mađarske gdje su ga donijeli španjolski vojnici; 2) sifilis su u Slavoniju izravno unijeli španjolski plaćenici iz zapadne Europe 20-ih godina 16. st. S obzirom na to da pisani izvori koji spominju sifilis u Slavoniji za to razdoblje ne postoje, ne može se sa sigurnošću utvrditi koja je opcija realnija. Crkvari se nalaze u neposrednoj blizini mađarske granice pa nije nelogično da je sifilis došao iz tog pravca, ali se u potpunosti ne može odbaciti niti druga pretpostavka. Činjenica jest da današnje stanje istraživanja nije zadovoljavajuće, te su stoga potrebna dodatna istraživanja i to i u arhivima, i na osteološkom materijalu kako bi se ovdje iznesene pretpostavke mogle potvrditi ili opovrgnuti.

Kostur analiziran u ovom radu ne može pomoći u rasvjetljavanju pitanja u vezi izvora i smjerova širenja treponematoza u svijetu, zbog nepobitne datacije u vrijeme nakon Kolumbovih putovanja. Na ovom mjestu nije prikladno ulaziti u širu raspravu o tome, no ipak je potrebno napomenuti kako je u Europi poznat veći broj slučajeva veneričnog sifilisa iz vremena prije 1493., tj. prije prvog Kolumbova putovanja. Slučajevi koje su opisali Henneberg i Henneberg (1994), Stirland (1991; 1994), Blondiaux i Alduc-Le Bagousse (1994), Power (1992), Roberts (1994), Bérato i sur. (1994), Pálfi i sur. (1994), Steinbock (1976), Meyer i sur. (2002), Ortner (2003), Mays i sur. (2003) pružaju čvrste dokaze o prisutnosti veneričnog sifilisa u Europi prije 1493. god., a s obzirom na mnogobrojne slučajeve spomenute u ovom radu očito je da će temeljne postavke kolumbovske teorije morati ponovo biti kritički razmotrene.

Na kraju, nužno je naglasiti potrebu za dodatnim istraživanjem drugih osteoloških uzoraka s područja Hrvatske, kao i potrebu za intenzivnijim molekularnim analizama i potragom za povijesnim svjedočanstvima u arhivima koji bi mogli baciti novo svjetlo na problematiku prepoznavanja izvora i pravaca širenja sifilisa i drugih zaraznih bolesti na tlu srednjovjekovne i novovjekovne Hrvatske.

These same mercenaries appear also in Slavonia. Budak et al. (2003) mention the number of 1500 Spanish soldiers present in this area during the 1520s.

These facts suggest two possible scenarios: 1) Syphilis arrived during the 16th cent. from Hungary, brought there by the Spanish soldiers; 2) Syphilis was directly imported to Slavonia by the Spanish mercenaries from western Europe during the 1520s. Taking into account that there are no written sources mentioning syphilis in Slavonia for that period, it cannot be ascertained which option is more realistic. Crkvari are situated in the immediate vicinity of the Hungarian border, so it is not illogical that syphilis should arrive from that direction, but the second assumption cannot be entirely discarded either. It is true that the present day level of research is unsatisfactory, and further research is needed both in the archives and on the osteological material, so that the assumptions put forward here can be validated or refuted.

The skeleton analyzed in this work cannot help in shedding light on the question regarding the source and directions of the spread of treponematoses in the world, due to the incontestable dating to the period after Columbus' voyages. It is not opportune to enter here into a wider discussion on that issue, but it nevertheless deserves mention that a large number of cases of venereal syphilis are known in Europe from the time before 1493, i.e. before the first of Columbus' voyages. The cases described by Henneberg and Henneberg (1994), Stirland (1991; 1994), Blondiaux and Alduc-Le Bagousse (1994), Power (1992), Roberts (1994), Bérato et al. (1994), Pálfi et al. (1994), Steinbock (1976), Meyer et al. (2002), Ortner (2003), Mays et al. (2003) offer strong evidence for the presence of venereal syphilis in Europe prior to 1493, and considering the numerous cases mentioned in this work it is obvious that the basic tenets of the Columbian theory will have to be critically reconsidered.

Finally, the need must be emphasised for further research on other osteological samples from the territory of Croatia, as well as for more intensive molecular analyses and the search for historical testimonies in the archives that could shed new light on the issue of recognizing the sources and directions of the spread of syphilis and other infectious diseases in the territory of medieval and Modern Age Croatia.

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