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[MOG] Submission Acknowledgement

1 pesan

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4 Januari 2024 pukul 07.56

Aditiawarman Aditiawarman:

Thank you for submitting the manuscript, "Case Report on Diagnosis & Management of Conjoint Twins in Early Pregnancy, A Low-Middle-Income Country Experience: Case Report on Diagnosis & Management of Conjoint Twins in Early Pregnancy, A Low-Middle-Income Country Experience" to Majalah Obstetri & Ginekologi. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

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Prof. Dr. Hendy Hendarto, dr, SpOG(K)

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Case Report on Diagnosis & Management of Conjoint Twins in Early Pregnancy, A Low-Middle-Income Country Experience.

Abstract

Introduction: Early diagnosis of conjoined twins is crucial to determining the type and prognosis.

Case Report: A 27-year-old woman was referred to the type A referral hospital with suspicion of congenital abnormalities at 17 weeks of pregnancy. Ultrasound results showed intrauterine monochorionic monoamniotic twins with babies fused on their heads to the urogenital part. The MRI showed a craniopagus, suspected meningomyelocele, and severe bilateral hydronephrosis in the second baby. The pregnancy was terminated using misoprostol induction and inserting a balloon catheter. The fetus is born weighing 400 g and 20 cm in length. Conjoined twins obtained the rostral type: a fused head with two faces, fused thorax until lower abdomen with one umbilicus, and two pairs of hands and feet.

Discussion: Diagnosis of conjoint twins becomes a problem in early pregnancy, mostly in developing countries. The geographical problems made access to public health an issue. Conjoined twins should be identified as soon as feasible to establish the best course of management for both mother and fetus.

Conclusion: Early diagnosis of conjoined twins provides a good outcome for the mother. Ultrasonography and MRI are modalities for determining the diagnosis and prognosis of conjoined twins.

Keywords: Conjoined twins, cephalothoracoabdominopagus, early diagnosis, management.

Introduction

Conjoined twins occur due to abnormalities in the process of embryogenesis in monoamniotic monochorionic pregnancies. The incidence of conjoined twins is 1 in 50,000 to 100,000 births. However, because 60% of them die in the womb or shortly after birth, the actual incidence can reach 1 in 250,000 live births. The ratio of women to men babies is 3:1 (Spitz, 2005).

Conjoined twins are classified based on the area of the body and internal organs that are fused: 11% cephalopagus (joined at the head), 19% thoracopagus (joined at the chest with one heart), 18% omphalopagus (lower abdomen), 11% ischiopagus (lower abdomen and

thoracic system genitourinary), 28% parapagus (joined on the sides of the body and pelvis), 5% craniopagus (cranium), 2% rachipagus (vertebral column), 6% pyopagus (sacrum) (Spencer, 2000).

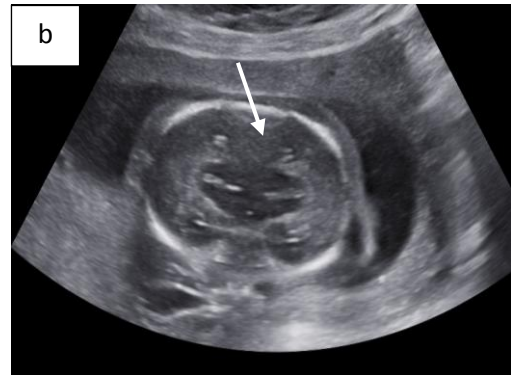
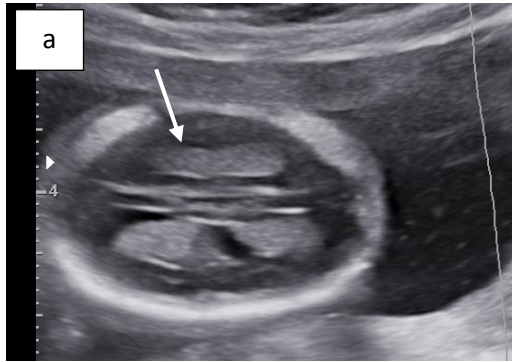
Based on the prognosis, conjoined twins are classified into 2, survived and non-survived. Survived conjoined twins consist of separable and non-separable twins (Harianto et al., 2015). Cephalopagus is frequently missed diagnosis as a singleton pregnancy because of the extreme degree of fusion. The type of conjoined twins, cephalothoracoabdominopagus itself, is a scarce type of conjoined twins with a poor prognosis. Prenatal diagnosis of conjoined twins is crucial to determine the prognosis so that it can properly manage both the mother and the fetus. The tools that can be used for early detection are ultrasonography and MRI (Kapoor et al., 2015).

Conjoined twins can be challenging to diagnose accurately, especially in the early stages of pregnancy. Sometimes, a diagnosis might be ambiguous, necessitating additional imaging or specialist testing. Referral to a specialized prenatal facility or consultation with a fetal medicine expert may be advised under challenging circumstances. This case report will describe a rare conjoint twin case that could be diagnosed early in pregnancy.

Case Reports

A 27-year-old woman, gravida 4, para 1, abortion 2, child alive 1, was referred to the type A referral hospital with suspicion of multiple congenital abnormalities with two hearts. The patient received antenatal checks at the public health care and obstetrician during pregnancy— anamnesis obtained a history of twin pregnancies from the husband's grandmother—general examination was recorded within normal limits. Obstetric examination found fundal height three fingers below the umbilical, and a positive fetal heart rate was observed. The patient had been taking pregnancy vitamins and folic acid since five weeks of gestation.

Ultrasound results at 17/18 weeks of gestation showed conjoined twins fused from head to urogenital part (one thalamus, two cerebellum, two hearts, 2 lungs, fetal hydrops, and spina bifida abnormalities were seen in one of the fetuses). The MRI showed a craniopagus, suspected meningomyelocele, and severe bilateral hydronephrosis in the second baby. Based on the ultrasound and MRI results, it showed a bad prognosis because it was categorized as non-separable and no-survived conjoint twins. The multidisciplinary (conjoint twin team) discussion decided to terminate the pregnancy.



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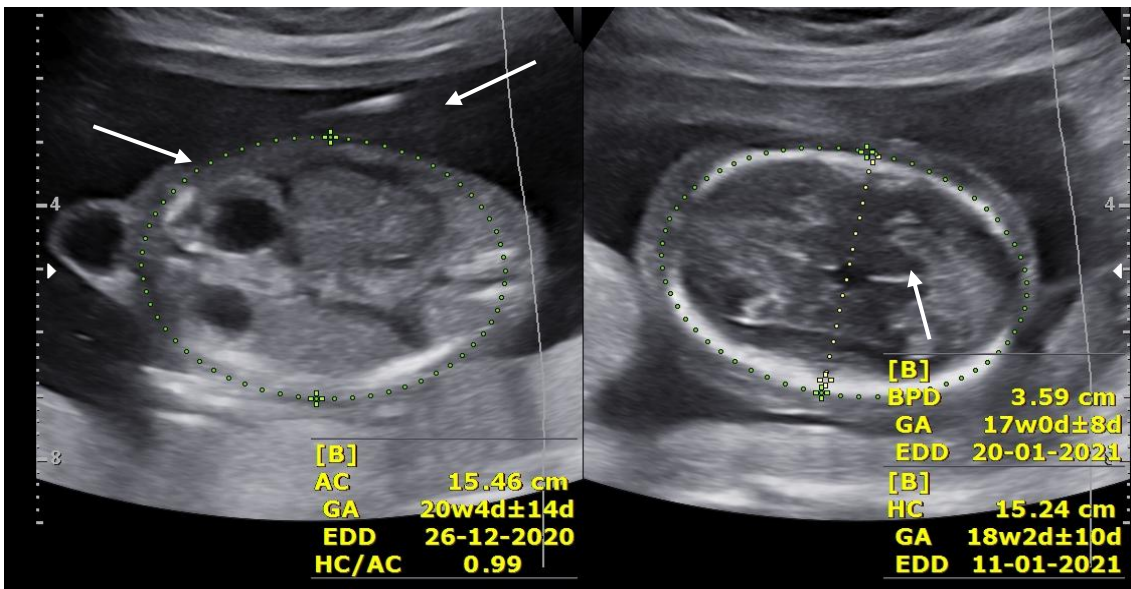


Figure 1. 2D ultrasonography results in a) Arrows indicate two choroid plexuses; b) Two fetal heads fused at the thalamus; c) Hydronephrosis was seen in one of the fetuses; d) There is scalp edema on the fetal side with hydronephrosis.

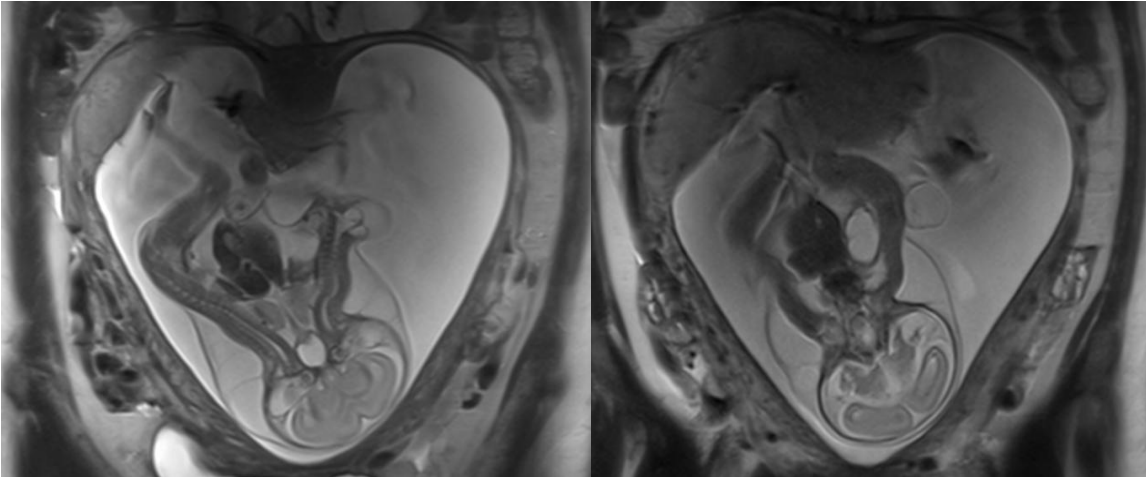


Figure 2. MRI results show two cerebellum lobes, two spines, two hearts, two lungs, and two livers. This organ fused on head to abdomen. Hydronephrosis and meningocele are also seen in this small fetus.



Figure 3. a) anterior part; b) posterior part

The patient was informed of her pregnancy's prognosis and decided to terminate it. The patient was terminated at 20 weeks of pregnancy by inducing a combination of misoprostol 200 mcg vaginally every 6 hours and inserting a balloon catheter. The fetus is born weighing 400 g and length of 20 cm. There were rostral conjoined twins, two heads with two faces in opposite positions, each with two eyes, one nose showing nasal proboscis, and two ears. And one mouth. The head is fused to the thoracic and lower abdomen and obtained omphalocele in one fetus with one umbilicus and one placenta. Siamese twins have two pairs of arms and legs. However, the patient refused to undergo an autopsy.

Discussion

The embryological process of conjoined twins has yet to be discovered clearly. There are various theories on the formation of conjoined twins: a) Fission theory, namely division in the early stages of embryo formation that comes from the fertilization of one ovum; b) Fusion theory, which suggests that conjoined twins result from two, initially separate monozygotic embryos, which coalesce and become secondarily and homologously fused (cephalopagus, thoracopagus, omphalopagus ischiopagus, and parapagus) (Spencer, 2000). Research on conjoined twins finds that union is homologous: head to head, buttocks to buttocks, chest to chest, back to back, sides to sides, but never head to buttocks or chest to back (Kaufman, 2004).

Conjoined twins are classified based on the area of the body and the fused internal organs. The most common conjoined twins found are the thoracopagus, omphalopagus, and thoracic-omphalopagus types, with an incidence of around 56% of the total number of conjoined twins (Kuroda et al., 2000). Cephalopagus conjoined twins fused from head to umbilicus are the rarest type. This type has one cranium and two opposite faces, with one face usually rudimentary. Another finding in cases of cephalopagus can be found in the lower abdomen and pelvis, which are separated by two pairs of hands and feet (Singh et al., 2003).

The diagnosis of conjoined twins in early pregnancy typically relies on prenatal ultrasound imaging. Some step involved in diagnosing conjoined twins during the early stages of pregnancy are : early ultrasound examination, identified gestational sac and embryos, assesment of fetal anatomy, evaluation placenta and umbilical cord and follow up examination properly. The ultrasound examination enables the identification of conjoined twins during prenatal diagnosis as early as 12 weeks of gestation. However, examining at 18-20 weeks of gestation is recommended for a more comprehensive assessment. Another modality that can be used is magnetic resonance imaging (MRI), which offers enhanced precision in providing anatomically detailed radiological images compared to ultrasound (Sabih et al., 2010) (Mathew et al., 2017). (Vagyannavar et al., 2017)

In the present case, a prenatal ultrasound assessment is performed during the 17th to 18th weeks of pregnancy. The result showed that the cranium and the thalamus are joining, affecting the brain's structure. Furthermore, one of the fetuses exhibited the

presence of an omphalocele and spina bifida. A magnetic resonance imaging (MRI) test was conducted to clarify the diagnosis further. The magnetic resonance imaging (MRI) scan reveals an image depicting two vertebrae, each fetus exhibiting distinct anatomical structures such as individual hearts, livers, and kidneys. Additionally, both fetuses exhibit the presence of a single pair of hands and feet. The tests showed that the conjoined twin fetuses, which were diagnosed as cephalo-thoraco-abdominopagus, are babies that cannot be separated and will not live.

Early prenatal diagnosis of conjoined twins plays an important role in determining fetal prognosis, determining further action, and providing better counseling to parents, including the decision to terminate the pregnancy. If the diagnosis is made before the fetus is viable, it is easier to terminate vaginally. The later the diagnosis, the possibility of termination by cesarean section increases

Conclusion

Conjoined twins of the cephalo-thoraco-abdominopagus type are very rare type of conjoined twins with a poor prognosis. Early prenatal diagnosis provides a good outcome for the mother. Ultrasonography and MRI are complementary modalities in determining the diagnosis and prognosis of conjoined twins.

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Kelengkapan Naskah

6 pesan

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22 Januari 2024 pukul 09.25

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Terima kasih dokter

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Pasien memiliki hak untuk menolak menandatangani formulir persetujuan ini. Penolakan untuk menandatangani formulir ini tidak akan mempengaruhi perawatan mereka dengan cara apapun.
Patients have the right to refuse to sign this consent form. Refusal to sign this form will not affect their care in any way.

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ABSTRACT
<p>Objectives: Abstract in approximately 250 words, started with a short explanation on the objectives of the study.</p> <p>Case Series: Provide the illustration of the case; therapy, procedures, the outcome and progress of the patient in concise narrative.</p> <p>Conclusion: The main conclusions/ summary of the report should be presented answering the aim of the report.</p> <p>Keywords: consist of 3-6 words or short phrases</p> <p>Correspondence: Corresponding author's name, affiliation, address of affiliation, phone number, and email address</p>

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INTRODUCTION

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DISCUSSION

The nature and findings of the report are placed in the context of other relevant published data. Limitations of the report should be discussed.

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Type	Age (Years)	Deviation standard	Quantity (People)
CIN 1	29-54	8.18	10
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Total patients			28

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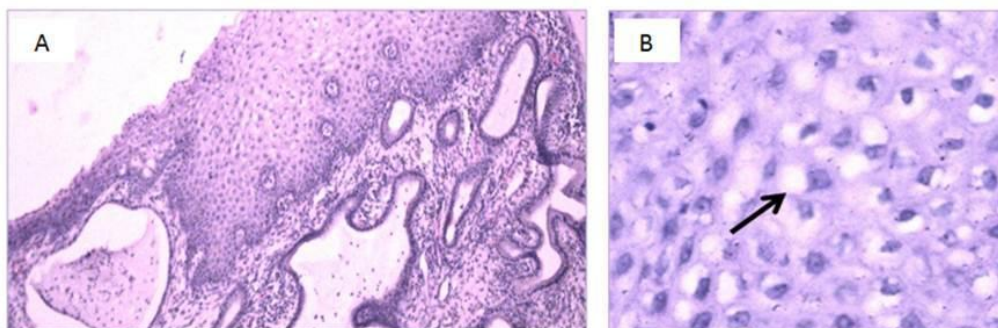


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CONCLUSION

Conclusion is the answer to the purpose of the report. Conclusions must be based on the report and discussion previously explained. Suggestions for further reports or studies may be included.

DISCLOSURES

Acknowledgment

The acknowledgment is a formal printed statement that recognizes individuals and institutions that contributed to the work being reported. Contributions to the research should be acknowledged. Acknowledge research contributions by people other than the authors, persons who gave scientific guidance, participated in discussions or shared unpublished results. The acknowledgment should be a simple statement of thanks, not a testimonial or dedication.

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Funding

To state the sponsor or funding sources of the research, if any.

Author Contribution

All authors have contributed to all processes in this research, including preparation, data gathering and analysis, drafting and approval for publication of this manuscript.

REFERENCES

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There have been efforts to replace mouse inoculation testing with in vitro tests, such as enzyme linked immunosorbent assays^{57,60} or polymerase chain reaction²⁰⁻²² but these remain experimental. Moir and Jessel maintain “that the sexes are interchangeable”.¹

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Pada Kam, 25 Jan 2024 pukul 15.40 Jihan Qonitatillah <jihanqonitatillah@yahoo.co.id> menulis:
Selamat sore dokter, mohon ijin mengirimkan revisi naskah MOG dengan judul "*Case Report on Diagnosis & Management of Conjoint Twins in Early Pregnancy, A Low-Middle-Income Country Experience*".
Terima kasih dokter

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5 Februari 2024 pukul 09.41

Kepada Yth.
Dr. dr. Aditiawarman, SpOG, Subsp. KFM

Naskah di Review

Redaksi mengucapkan terima kasih atas naskah yang telah dikirimkan ke Redaksi MOG dengan judul "*Case Report on Diagnosis & Management of Conjoint Twins in Early Pregnancy, A Low-Middle-Income Country Experience*".

Naskah tersebut telah menjalani proses review. Dimohon untuk memperbaiki naskah sebagaimana terlampir. Kami harapkan hasil perbaikan dapat kami terima selambatnya 12 Februari 2024. Jika tidak ada respon sampai dengan waktu yang sudah kami tentukan, akan kami ganti dengan naskah yang lain. Untuk revisi mohon diberikan tanda berupa stabilo atau yang lainnya.

Demikian atas perhatiannya kami sampaikan terima kasih.

Asisten Editor
Majalah Obstetri & Ginekologi

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7 Februari 2024 pukul 11.43

Berikut kami kirimkan revisi sesuai yang diminta oleh reviewer

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REVIEWER'S EVALUATION FOR CASE REPORT

Manuscript Title : **Case Report on Diagnosis & Management of Conjoint Twins in Early Pregnancy, A Low-Middle-Income Country Experience**

Manuscript Number : 2404

Topic	No.	Checklist Evaluation	Reported		Comment(s)
			Yes	No	
Title	1.	The diagnosis of intervention of primary focus followed by the words "case report".	V		
	2.	The title is relevant, precise, interesting, and reflects overall contents of the study.		V	Judul kurang menarik, perlu direvisi. Pada kasus ini tidak ada manajemen khusus ke bayi karena lahir meninggal.
Keywords	3.	Five or more keywords that identify diagnoses or interventions are provided.		V	Hanya 4 kata kunci
	4.	Keywords are relevant and appropriate for the study.	V		
Abstract	5.	The uniqueness of the clinical case is presented.		V	Belum tertulis di abstrak
	6.	Significance(s) for the development of scientific literature is well presented.		V	Belum tertulis di abstrak
	7.	The main symptoms and clinical findings are described.	V		
	8.	The main diagnoses, therapeutic interventions, and outcomes are described.	V		
	9.	The main take-away lesson(s) from the study are presented.	V		
Introduction	10.	A clear statement demonstrating the focus of the case is described.	V		
	11.	One or two paragraphs summarizing why the case is unique (may include relevant references from reputable journals in the last 5 to 10 years) are present.		V	Belum tampak, perlu ditambahkan keunikan kasus ini. Ditulis secara khusus di introduksi.
	12.	The report introduces a novel aspect in patient evaluation, investigation, treatment, and any other aspect related to patient's care.	V		
Patients Information	13.	Patients' specific information is clearly identified.	V		
	14.	Patient(s)' anonymity and confidentiality are ensured.	V		
	15.	Primary concerns and symptoms of the patients are described.	V		
	16.	The report involves edical, family, and psycho-social history, including relevant genetic information.		V	Belum ada.
	17.	Relevant past interventions with outcomes are present.		V	Perlu ditambahkan, riwayat kehamilan sebelumnya, riwayat keluarga dll.
	18.	Actual, clear, and readable table and figure are present.	V		
Clinical Findings	19.	Significant physical examination (PE) and important clinical findings are described.		V	Kurang lengkap.
	20.	Patient' history, differential diagnostic, management, and outcome have been described in chronological order.	V		
Timeline	21.	Historical and current information from the episode of care organized as timeline have been provided.		V	Tidak ada. Perjalanan ANC dan perawatan secara kronologis berurutan.
Diagnostic	22.	Diagnostic testing is provided.	V		



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Assessment	23.	Diagnostic challenges are provided.		V	Belum ditulis.
	24.	A diagnosis (including other diagnoses considered) is described.	V		
Therapeutic Intervention	25.	Types of therapeutic intervention (e.g., pharmacologic, surgical, preventive, self-care) are described.		V	Apa saja pilihan terapi? Penanganan kehamilan?
	26.	The administration of therapeutic intervention (e.g., dosage, strength, duration) is present.	V		
	27.	Changes in therapeutic interventions (with rationale) are present.	V		
Outcomes	28.	Clinician and patient-assessed outcomes are described.	V		
	29.	An important follow-up diagnostic and other test results are present.	V		
	30.	Intervention adherence and tolerability are present.	-	-	
	31.	Adverse and unanticipated events are present.	-	-	
Discussion	32.	Comprehensive scientific discussion of the strengths and limitations associated with the study has been provided.		V	Tambahkan kekuatan dan kelemahan studi ini.
	33.	Relevant medical literatures with reference within 5 to 10 years are provided.		V	Banyak literatur > 10 tahun
	34.	Scientific rationale for any conclusions is present.	V		
	35.	The primary take-away lesson of the case in one paragraph conclusion is described.	V		
	36.	The competing interest is described (if any).	-		
Patient Perspective	37.	A shared perspective of the patient(s) in one to two paragraphs about the treatment they received is provided.		V	
Informed Consent	38.	A clear form of informed consent of the patient(s) is provided.		V	
	39.	The Informed Consent is written explicitly in the patient's own language, understood and signed by the patient(s).		V	
Writing and Referencing Style	40.	Clearly present its case, well written in a correct grammar, punctuation, spelling, and sentence structure.	V		
	41.	Do not have over-reliance on limited sources and in-text citations are found in the reference list.	-		
	42.	The manuscript has been written based on the template for Case Report.	V		

Final Recommendation

Instruction: Please (√) in the selection box.

Accepted

[insert additional comment(s) here].

V	Accepted with Minor Revision
	Accepted with Major Revision
	Reject

Additional Comment(s):

Reviewed on Feb/5/2024

CASE REPORT:

Case Report on Early Diagnosis & Management of unseparable Conjoint Twins, A Low-Middle-Income Country Experience

Aditiawarman *

¹Obstetrics and Gynecology Department, Universitas Airlangga, Dr. Soetomo Academic Hospital, Surabaya, Indonesia.

ABSTRACT

Objectives: To discuss the crucial early diagnosis of conjoined twins to determine the type and prognosis.

Case Series: A 27-year-old woman was referred to the type A referral hospital with suspicion of congenital abnormalities at 17 weeks of pregnancy. Ultrasound results showed intrauterine monochorionic monoamniotic twins with babies fused on their heads to the urogenital part. The MRI showed a craniopagus, suspected meningocele, and severe bilateral hydronephrosis in the second baby. Due to non-separable cases and a bad prognosis for the fetus, the pregnancy was terminated using misoprostol induction and inserting a balloon catheter. The fetus is born weighing 400 g and 20 cm in length. Conjoined twins obtained the rostral type: a fused head with two faces, a fused thorax until the lower abdomen with one umbilicus, and two pairs of hands and feet. The diagnosis of conjoint twins becomes a problem in early pregnancy, mostly in developing countries. Early diagnosis of conjoined twins during prenatal examination is critical for ascertaining the prognosis of the fetus, guiding parental counseling over appropriate courses of action, and potentially enabling the termination of the pregnancy to prevent maternal stress and complications.

Conclusion: Conjoined twins should be identified as soon as feasible to establish the best course of management for both mother and fetus. Ultrasonography and MRI are modalities for determining the diagnosis and prognosis of conjoined twins.

Keywords: Conjoined twins, non-separable, cephalon-thoraco-abdomino phagus, early diagnosis, management.

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Highlights:

1. Conjoined twins have captivated mankind for centuries due to the rarity of this birth type; nonetheless, physicians have constantly encountered difficulties in dealing with conjoined twins.

2. Early diagnosis of conjoined twins during prenatal examination is critical for ascertaining the prognosis of the fetus, guiding parental counseling over appropriate courses of action, and potentially enabling the termination of the pregnancy.
3. First-trimester ultrasonography and MRI are complementary modalities in determining the diagnosis and prognosis of conjoined twins in early pregnancy.

INTRODUCTION

Conjoined twins occur due to abnormalities in the process of embryogenesis in monoamniotic monochorionic pregnancies, which are proposed to have resulted from either fission or fusion. Due to the imperfect division of one fertilized ovum, conjoined twins are identical monozygotic twins that do not entirely separate from one another but are still partially linked to one another¹. The incidence of conjoined twins is 1 in 50,000 to 100,000 births. However, because 60% of them die in the womb or shortly after birth, the actual incidence can reach 1 in 250,000 live births. The ratio of women to men babies is 3:1².

Conjoined twins are classified based on the area of the body and internal organs that are fused: 11% cephalopagus (joined at the head), 19% thoracopagus (joined at the chest with one heart), 18% omphalopagus (lower abdomen), 11% ischiopagus (lower abdomen and thoracic system genitourinary), 28% parapagus (joined on the sides of the body and pelvis), 5% craniopagus (cranium), 2% rachipagus (vertebral column), and 6% pyopagus (sacrum)³.

Based on the prognosis, conjoined twins are classified into 2, survived and non-survived. Survived conjoined twins consist of separable and non-separable twins (Arsil, Harianto et al., 2015). Cephalopagus is frequently missed as a singleton pregnancy because of the extreme degree of fusion. The type of conjoined twins, cephalothoracoabdominopagus itself, is a scarce type of conjoined twins with a poor prognosis. Prenatal diagnosis of conjoined twins is crucial to determine the prognosis so that it can properly manage both the mother and the fetus. The tools that can be used for early detection are ultrasonography and MRI⁴.

Conjoined twins can be challenging to diagnose accurately, especially in the early stages of pregnancy. Sometimes, a diagnosis might be ambiguous, necessitating additional imaging or specialist testing. Referral to a specialized prenatal facility or consultation with a fetal medicine expert may be advised under challenging circumstances. **This case report will describe a rare**

conjoint twin case that could be diagnosed early in pregnancy. And can be appropriately managed in early pregnancy.

CASE REPORT

A 27-year-old woman, gravida 4, para 1, abortion 2, child alive 1, was referred to the type A referral hospital with suspicion of multiple congenital abnormalities with two hearts. The patient received antenatal checks twice at the public health care and once times at an obstetrician during pregnancy— anamnesis obtained a history of twin pregnancies from the husband's grandmother— general examination was recorded within normal limits. An obstetric examination found fundal height three fingers below the umbilical, a positive fetal heart rate was observed, and an ultrasound examination revealed multiple congenital anomalies. The patient had been taking pregnancy vitamins and folic acid since five weeks of gestation.

Ultrasound results at 17/18 weeks of gestation at Dr. Soetomo Hospital showed conjoined twins fused from head to urogenital part (one thalamus, two cerebellum, two hearts, two lungs, fetal hydrops, and spina bifida abnormalities were seen in one of the fetuses). The MRI confirmation showed a craniopagus, suspected meningomyelocele, and severe bilateral hydronephrosis in the second baby. Based on the ultrasound and MRI results, it showed a bad prognosis because it was categorized as non-separable and non-survived conjoint twins. The multidisciplinary (conjoint twin team) discussion decided to terminate the pregnancy.

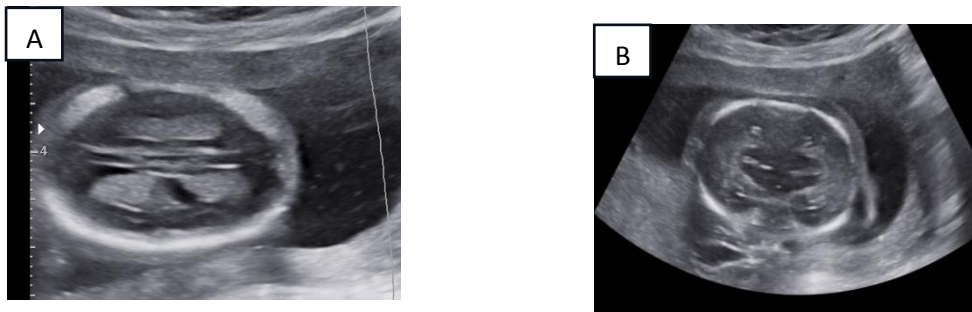


Figure 1. 2D ultrasonography results in a) Arrows indicate two choroid plexuses, b) Two fetal heads fused at the thalamus

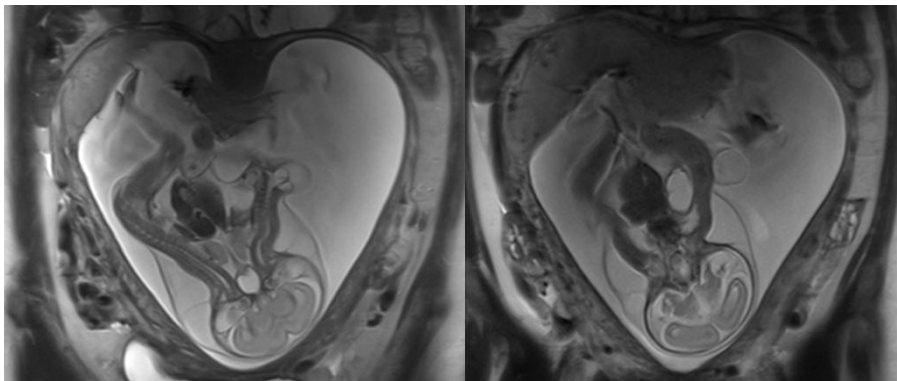


Figure 2. MRI results show two cerebellum lobes, two spines, two hearts, two lungs, and two livers. This organ fused on head to abdomen. Hydronephrosis and meningomyelocele are also seen in this small fetus.



Figure 3. a) anterior part, b) posterior part

In non-separable cases, if it is discovered early in pregnancy, there is a possibility of terminating the pregnancy or maintaining it until term or the patient goes into labor spontaneously;

however, if the decision waits until term, there is a possible risk of having a cesarean section at the time of delivery. If the diagnosis is early, it allows for early termination so that no surgery is required and prevents stress on the mother. The patient was informed of her pregnancy's prognosis and management options. The patient and family decided to terminate it. The patient was terminated at 20 weeks of pregnancy by inducing a combination of misoprostol 200 mcg vaginally every 6 hours and inserting a balloon catheter. The fetus is born weighing 400 g and has a length of 20 cm. There were rostral conjoined twins, two heads with two faces in opposite positions, each with two eyes, one nose showing nasal proboscis, and two ears. And one mouth. The head is fused to the thoracic and lower abdomen, and an omphalocele is obtained in one fetus with one umbilicus and one placenta. Siamese twins have two pairs of arms and legs. However, the patient refused to undergo an autopsy.

DISCUSSION

Conjoined twins have captivated mankind for centuries due to the rarity of this birth type; nonetheless, physicians have constantly encountered difficulties in dealing with conjoined twins⁵. The embryological process of conjoined twins has yet to be discovered clearly. There are various theories on the formation of conjoined twins: a) Fission theory, namely division in the early stages of embryo formation that comes from the fertilization of one ovum; b) Fusion theory, which suggests that conjoined twins result from two, initially separate monozygotic embryos, which coalesce and become secondarily and homologously fused (cephalopagus, thoracopagus, omphalopagus, ischiopagus, and parapagus)³. Research on conjoined twins finds that union is homologous: head to head, buttocks to buttocks, chest to chest, back to back, sides to sides, but never head to buttocks or chest to back⁶.

Conjoined twins are classified based on the area of the body and the fused internal organs. The most common conjoined twins found are the thoracopagus, omphalopagus, and thoracic-omphalopagus types, with an incidence of around 56% of the total number of conjoined twins⁷. Cephalopagus conjoined twins fused from head to umbilicus are the rarest type. This type has one cranium and two opposite faces, with one face usually rudimentary. Another finding in cases of cephalopagus can be found in the lower abdomen and pelvis, which are separated by two pairs of hands and feet⁸.

Seventy percent of conjoined twins die within twenty-four to forty-eight hours after delivery or have a lethal congenital disease caused by the untimely diagnosis, which delays the implementation of optimal surgical treatment. Thus, early diagnosis and treatment are preferred^{9,10}. Prior studies utilized ultrasonography to diagnose conjoined twins between 11 and 13 weeks of gestation¹¹. Recent studies have documented the diagnosis of fetal abnormalities in twin pregnancies as early as 8 weeks gestation; nevertheless, precise assessment of shared anatomical components remains unattainable⁵. Pregnancy termination remains the most effective course of action, regardless of gestational age, but especially during the early stages.

The diagnosis of conjoined twins in early pregnancy typically relies on prenatal ultrasound imaging. Some steps involved in diagnosing conjoined twins during the early stages of pregnancy are: early ultrasound examination, identification of gestational sac and embryos, assesment of fetal anatomy, evaluation of the placenta and umbilical cord, and proper follow-up examination. The ultrasound examination enables the identification of conjoined twins during prenatal diagnosis as early as 12 weeks of gestation. However, examination at 18-20 weeks of gestation is recommended for a more comprehensive assessment. Another modality that can be used is magnetic resonance imaging (MRI), which offers enhanced precision in providing anatomically detailed radiological images compared to ultrasound¹²⁻¹⁴.

In the present case, a prenatal ultrasound assessment is performed during the 17th to 18th weeks of pregnancy. The result showed that the cranium and the thalamus are joining, affecting the brain's structure. Furthermore, one of the fetuses exhibited the presence of an omphalocele and spina bifida. A magnetic resonance imaging (MRI) test was conducted to clarify the diagnosis further. The magnetic resonance imaging (MRI) scan reveals an image depicting two vertebrae, each fetus exhibiting distinct anatomical structures such as individual hearts, livers, and kidneys. Additionally, both fetuses exhibit the presence of a single pair of hands and feet. The tests showed that the conjoined twin fetuses, which were diagnosed as cephalo-thoraco-abdominopagus, are babies that cannot be separated and will not live.

In general, conjoined twins have a poor prognosis. The survival rate is indeed 7.5%. Survival rates for surgically separated cases are as low as 60%¹⁵. An improved prognosis could result from antenatal imaging, postnatal surgery, tissue expansion during surgery, and cadaveric transplantation for important organs shared by the twins, if applicable¹⁶. Legal abortion should be contemplated in Indonesia when a fetus has a life-threatening congenital abnormality with a poor

prognosis, especially cephalon-thoraco-abdominophagus twins, whose survival rate is low and unlikely to be successfully separated¹⁷.

Early diagnosis of conjoined twins during prenatal examination is critical for ascertaining the prognosis of the fetus, guiding parental counseling over appropriate courses of action, and potentially enabling the termination of the pregnancy. First-trimester ultrasonography continues to be the most effective diagnostic modality in early pregnancy. Additionally, prenatal magnetic resonance imaging can assist in tissue characterization, conjunction type identification, and the detection of embryological malformations¹⁸. Once applicable, contemporary techniques such as 3D printing may facilitate surgical pre-planning and subsequent separation¹³. A viable pregnancy is easier to terminate vaginally if the diagnosis is made before that time, which may lessen the risk of trauma¹⁹. As the diagnosis progresses, the probability of achieving termination via cesarean section augments. Early pregnancy termination is considered a safer option due to its potential to mitigate the emotional impact on the couples, which could be exacerbated by the numerous interdisciplinary follow-ups that are required throughout the prenatal and postnatal phases²⁰. The effective management of conjoined twins necessitates the close collaboration of a multidisciplinary team²¹.

CONCLUSION

Conjoined twins of the cephalon-thoraco-abdominophagus type are a very rare type of conjoined twin with a poor prognosis. An early prenatal diagnosis provides a good outcome for the mother. Ultrasonography and MRI are complementary modalities in determining the diagnosis and prognosis of conjoined twins.

DISCLOSURES

Acknowledgement

Thanks to the study participant and the fetomaternal team, The Conjoint twin team of Dr. Soetomo General Academic Hospital, Surabaya, Indonesia, for their support.

Conflict of interest

The author report there are no competing interests to declare.

Patient consent for publication

The author report there are no competing interests to declare.

Funding

This research has received no external funding.

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Persetujuan Pasien untuk Publikasi
Patient Consent for Publication

Informasi berikut harus disampaikan agar formulir ini diproses secara akurat.
The following information must be provided in order for this form to be processed accurately.

Pasien memiliki hak untuk menolak menandatangani formulir persetujuan ini. Penolakan untuk menandatangani formulir ini tidak akan mempengaruhi perawatan mereka dengan cara apapun.
Patients have the right to refuse to sign this consent form. Refusal to sign this form will not affect their care in any way.

1. Dengan ini saya memberikan persetujuan saya untuk gambar atau informasi klinis lainnya yang berkaitan dengan kasus saya untuk dilaporkan dalam publikasi kedokteran.
I hereby give my consent for images or other clinical information relating to my case to be reported in a medical publication.

2. Saya mengerti bahwa materi ini akan dipublikasikan tanpa nama saya terlampir. Segala upaya akan dilakukan untuk memastikan saya tidak dapat diidentifikasi, tetapi kerahasiaan identitas lengkap saya tidak dapat dijamin.
I understand that the material will be published without my name attached. Every effort will be made to ensure I can not be identified, but my complete anonymity cannot be guaranteed.

3. Saya mengerti bahwa materi tersebut dapat dipublikasikan dalam jurnal, website, atau dalam bentuk publikasi lainnya sehingga saya mengerti bahwa materi ini dapat dilihat oleh masyarakat umum.
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Nama Pasien: Mukhammad
Name of patient

Tanda tangan pasien/Orang yang mewakili pasien: [Signature]
Signed of patient/ The person giving consent on behalf of the patient

Tanggal: 25/10/23
Date

Jika bukan pasien, apa hubungan Anda dengannya? (Orang yang memberikan persetujuan harus menjadi pembuat keputusan pengganti atau wali sah atau harus memegang kuasa untuk pasien).
If you are not the patient, what is your relationship to him or her? (The person giving consent should be a substitute decision maker or legal guardian or should hold power of attorney for the patient).



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Mengapa pasien tidak bisa memberikan persetujuan? (misal Apakah pasien di bawah umur, lumpuh atau meninggal dunia?) *Why is the patient not able to give consent? (e.g. is the patient a minor, incapacitated or deceased?)*

Nama dokter:
Name of doctor

ADITIAWARMAN

Tanda tangan:
Signed

Tanggal:
Date

25/10/23

Majalah Obstetri & Ginekologi



Surat Pemuatan Naskah

3 pesan

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Kepada: Aditiawarman Aditiawarman <aditiawarman.unair@gmail.com>

5 Maret 2024 pukul 10.42

Kepada Yth.
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Departemen Obstetri dan Ginekologi
RSUD Dr. Soetomo
Fakultas Kedokteran
Universitas Airlangga
Surabaya

Bersama ini kami beritahukan bahwa redaksi Majalah Obstetri & Ginekologi telah menerima naskah Saudara berjudul “*Case Report on Early Diagnosis & Management of unseparable Conjoint Twins, A Low-Middle-Income Country Experience*”. Naskah tersebut akan terbit pada Majalah Obstetri & Ginekologi volume 32 no. 1 April 2024

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