INTRODUCTION

Mating call characteristics may occur through modified behavioral endocrine mechanisms in some mammals and reptiles, including the American alligator, Alligator mississippiensis. Changes in the endocrine system of the alligator during the breeding season may contribute to the production of modified mating call characteristics. The present study examines the endocrine changes associated with mating call modifications in Alligator mississippiensis. The study involved the measurement of plasma concentrations of testosterone, estradiol, and progesterone in males and females during the breeding season. The results indicate that changes in the endocrine system of the alligator during the breeding season may contribute to the production of modified mating call characteristics.
In vivo cross-sectional magnetic resonance imaging (MRI) was performed to evaluate the structural and functional integrity of the reconstructed ACL. The images were acquired using a clinical 3T MRI system (Siemens Avanto, Erlangen, Germany) with a knee coil. The protocol included coronal, sagittal, and axial T1-weighted spin-echo images, proton density-weighted images, and T2-weighted fat-suppressed images. The data were analyzed to assess the integrity of the reconstructed ligament, the surrounding soft tissues, and any signs of potential complications such as fluid collections or abnormal signal intensities.

The postoperative MRI revealed a well-integrated reconstructed ACL, with no signs of subluxation or instability. The surrounding tissues appeared intact, with no evidence of edema or accumulation of fluid. The results were consistent with a successful ACL reconstruction, with no complications identified.

The clinical follow-up also supported these findings, with the patient reporting no pain or instability, and full range of motion in the knee. The patient was able to return to full activity without restrictions after the 6-month mark, indicating a successful outcome of the surgery.

In conclusion, the combination of clinical follow-up and imaging assessments confirmed the successful outcome of the ACL reconstruction, with no signs of complications or instability.
Leptodactylus mystacinus

Barrio (1965) described and figured the call of a specimen from the Provincia de Córdoba, Argentina, recorded at a temperature of 20.8°C. The calls were a single note with a duration of 0.1 sec; repetition rate of 300-400/min, and dominant frequency of 2200-2500 Hz.

Leptodactylus ocellatus

Barrio (1966) described and figured the call of specimens from the province of Santa Fé, Argentina (19.5-20.0°C): duration = 0.4 sec; dominant frequency = ca. 100 Hz; 8 to 10 moderately to poorly differentiated harmonics, and weak frequency modulation. Specimens from Utinga, Pará, Brasil, display similar calls but with shorter duration. The call consists of a single prolonged note with a mean duration of 0.27 sec which is partially pulsatile. The envelope is fusiform with maximum amplitude at 100 msec and slight modulations at 80, 120, and 200 msec. Frequency falls off through the call in discrete steps rather than in a steady sweep. The carrier frequency is virtually sinusoidal, starts at 1000 Hz and drops to 830 Hz at 80 msec, 850 Hz at 120 msec, 710 Hz at 200 msec and 630 Hz at the end. The apparent harmonic or overtone structure in sonograms is due to partial pulsing.

Leptodactylus pentadactylus

The call is based on 14 individuals (10 consecutive calls each) from a single population at Rincon de Osa, Provincia de Puntarenas, Costa Rica: duration = 0.26 to 0.28 sec. Repetition rate is irregular and reaches a maximum of 35/min. The single note has 9-11 well defined pulses and additional weak pulses at beginning and/or end. Amplitude modulation is rarely complete but always greater than 50%. The pulses vary in length from 21-30 msec tending to increase through the pulse. Pulse repetition averages 40 p.p.s. (5 individuals at 25±1°C) but slows slightly through the note. Frequency changes upward with each pulse from 200 Hz at the beginning to 600 Hz at the end of the note.

Fouquet (1960) described and figured the call from a specimen from Panama recorded at approximately 23°C: duration = 0.27 sec; repetition rate = 31/min; dominant frequency 200-450 Hz; weakly defined harmonics, and frequency modulation. Two notes of a frog from Santa Cecilia, Napo, Ecuador, at a temperature of 23.5°C differ only in having dominant frequency of 425-800 Hz (Fig. 7).

Leptodactylus podicipinus

Barrio (1965) described and figured the call of a specimen from the Provincia de Santa Fé, Argentina (21.5°C). The single note had an approximate duration of 0.1 sec, repetition rate of 210 notes/min, a broad dominant frequency component of 500-3000 Hz, and no frequency or intensity modulation.

Leptodactylus poecilocelhis

Fouquette (1960) described and figured the call (as L. quadrivittatus) of a specimen from Panama (27°C). The call is a single note of medium duration 55 msec, repetition rate of 102/min, fundamental frequency of 350-350 Hz, several well-defined harmonics, and frequency modulation. Frogs from Changanáte, Province, Costa Rica, produce similar sonograms with slightly longer notes (mean = 80 msec). The note is non-pulsatile and sweeps smoothly from a beginning frequency of 700 Hz to 1300 Hz at the end without harmonic structure.

Leptodactylus syphax

Bokermann (1969) described and figured the call of a specimen from Chapada dos Guimarães, Mato Grosso, Brasil (28°C). The call is a single note with a duration of approximately 0.1 sec, a repetition rate of 55-70/min, dominant frequency of from 1500-3200 Hz, well-defined harmonics, and frequency modulation.

Leptodactylus wagneri

Calls from four different origins are distinctive, so are described separately. The call of a specimen from Belém, Pará, Brasil (29°C), is a single note of duration 0.69 sec, dominant frequency of 1000-3400 Hz with most energy between 2900-3200 Hz. There are two weakly differentiated harmonics, one of 5300-5900 Hz, and the second at 7700-8000 Hz. Four calls of a specimen from Rancho Grande Research Station, Aragua, Venezuela (23°C), have a mean duration of 0.13 sec, repetition rate of 54/min, a broad frequency response of 1175-3450 Hz with most energy between 2800 and 3100 Hz. Two calls display weakly defined harmonics, one between 4900-5300 Hz, the second at 7000-7750 Hz. Four calls of a specimen from Santa Cecilia, Napo, Ecuador (23°C); have an average duration of 0.69 sec, repetition rate of 54/min, a broad frequency bandwidth of 925-3175 Hz with the greatest energy between 1950-2850 Hz and two weakly defined harmonics one at 3700-4700 Hz and a second at 5200-6500 Hz. Twenty-one calls from three specimens from Limonoca, Napo, Ecuador (24-25°C), have a mean duration of 0.03 sec, a repetition rate of 96/min, a restricted frequency bandwidth of 1097-1676 Hz; some notes have a faint harmonic from 1900-2100 Hz, to 2600-3000 Hz. No calls are intensity modulated. The note is a single pulse of 17 msec duration with an elliptical amplitude envelope. Frequency is swept very rapidly from below 1000 Hz to 1200 Hz within the pulse (Fig. 8).

Vanzolinus discodactylus

A call consists of a series of notes repeated frequently. Analysis of 14 notes from a single individual indicates that each note has a mean duration of 0.07 sec, a mean repetition rate of 60/min; dominant frequency range from 2580±131 to 3407±142 Hz. No harmonic structure is present and the note lacks frequency modulation (air temperature = 23.4°C, water temperature = 23.6°C). The fine structure
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References

Particulars which are published together within the preceding articles. Additional details in the figures and in the captions are to be found in the sources quoted. All other facts are contained in the sources quoted and in the captions. Further information can be found in the references provided.
Fig. 1. Sonogram of calls of *L. bufonius* (above) and oscilloscope trace of a single call at 10x speed to show the amplitude (relative intensity) pattern with time.
Fig. 2. Sonogram of a series of calls of *L. fuscus* (above) and oscilloscope trace of a single call at 10x speed to show the amplitude (relative intensity) pattern with time.
Fig. 3. Sonogram of a series of calls of *L. labialis* (above) and an oscilloscope trace of a single call at 10x speed to show the amplitude (relative intensity) pattern with time.
Fig. 4. Sonogram of a series of calls of *L. latinasus* (above) and an oscilloscope trace a single call at 10x speed to show the amplitude (relative intensity) pattern with time.
Fig. 5. Sonogram of a series of calls of *L. melosomatus* (above) and an oscilloscope trace of a single call at 10x speed to show the amplitude (relative intensity) pattern with time.
Fig. 6. Sonogram of a series of calls of *L. mystaceus* (above) and an oscilloscope trace of a single call at 10x speed to show the amplitude (relative intensity) pattern with time.
Fig. 7. Sonogram of a series of calls of *L. pentadactylus* (above) and an oscilloscope trace of a single call at 10x speed to show the amplitude (relative intensity) pattern with time.
Fig. 8. Sonogram of a series of calls of *L. wagneri* (above) and an oscilloscope trace of a single call at 10x speed to show the amplitude (relative intensity) pattern with time.
Fig. 9. Sonogram of a series of calls of *Vanzolinus discodactylus* (above) and an oscilloscope trace of a single call at 10x speed to show the amplitude (relative intensity) pattern with time.