Atrial Parasystole With Exit Block and Post-Parasystolic P and T Waves Changes*

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Atrial parasystole is rare and the majority of the reported cases of this arrhythmia seem to be the examples of parasystole with simple interference of two rhythms without exit block. On the other hand, it appears that there is only one documented case of atrial parasystole in which there is evidence for the presence of exit block. Holzmann's\textsuperscript{4} case of atrial parasystole with possible 4:1 and 3:1 exit block could be considered to be A-V nodal in origin since the ectopic P' waves are inverted in leads 1, 2, and 3. In the case discussed by Anttonen et al\textsuperscript{6} the presence of exit block is not conclusive, as the atrial rate during paroxysmal atrial tachycardia and atrial flutter is not a simple multiple of the calculated parasystolic rate.

I have observed a patient who transiently (for a period less than 24 hours) showed atrial parasystole with exit block which is of interest because of the rarity of the arrhythmia and some of the unusual features which it presented. The patient was a 75-year-old man** who had essential hypertension for a period of two years and mild diabetes mellitus for one year. He never received digitalis and never had an attack of paroxysmal atrial tachycardia or atrial flutter.

**In order to save space, detailed case notes are not presented but are available from the author upon request.

DISCUSSION

Figure 1 shows sinus beats with notched P waves and ectopic atrial beats with peaked P' waves. The atrial ectopic beats are coupled variably (40 to 72 seconds\textsuperscript{+}) to the respective preceding sinus P wave. The longer interectopic intervals of P' beats seem to be the near multiples of the shortest interectopic interval of about 50 seconds' duration. Since these ectopic atrial complexes appear with variable coupling in the presence of a common denominator, they must be considered parasystolic in origin. Second and third atrial parasystolic beats occur in succession without being separated by a

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Continuous recording of lead 2. The coupling intervals for atrial ectopic beats and for ventricular ectopic beats shown in parenthesis are mentioned above the ECG recording.}
\end{figure}

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TABLE

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<th>Features</th>
<th>Observations</th>
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<tr>
<td>1. Variation in the coupling interval</td>
<td>60 (Fig 1) to 101 (Fig 2E) seconds</td>
<td>Coupling intervals are less variable in atrial parasystole. The marked variation in our case is perhaps explainable by fluctuations in the degree of exit block.</td>
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<td>2. PR interval of parasystolic beats</td>
<td>14 seconds</td>
<td>PR interval of parasystolic beats is shorter than the PR interval of sinus beats which is rare.</td>
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<td>3. Post-parasystolic P wave change</td>
<td>P waves following third and 7th parasystolic beats in Fig 1 and parasystolic beats in Fig 3 are of different shape.</td>
<td>A similar observation was made in a case by Chang et al. who attributed it to the ineffective atrial aberration conduction, although the possibility of a shift of the sinus pacemaker was entertained.</td>
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<td>4. Post-parasystolic T wave change with an increase in the amplitude of T wave</td>
<td>Figure 2F</td>
<td>This change was present in only few beats. It has not been observed in previously reported cases of atrial parasystole. The entire tracing did not reveal any relationship between the coupling interval of parasystolic beats and the appearance of post-parasystolic P and T wave changes.</td>
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<td>5. Post-parasystolic T wave change with an increase in the amplitude of T wave</td>
<td>Lower strip of Fig 1 and Fig 2A</td>
<td>Not uncommon.</td>
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<td>6. Exit block for parasystolic focus</td>
<td>Fig 2A, B, C, D and part of Fig 1</td>
<td>In the present case, it is difficult to deduce the degree of exit block because the long interectopic intervals of parasystolic beats always conceal sinus beats. An exit block of at least 2-3 seconds seems to be present.</td>
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The additional features of our case are presented in Table 1.

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REFERENCES


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